# DICOM Conformance Statement

Application Annex:

## NM Applications on Philips IntelliSpace Portal V11

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HSDPCPF-T-020001.08 (Rev B)

PHILIPS

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# 1. Introduction

This DICOM Conformance Statement annex is applicable to the NM Applications on Philips IntelliSpace Portal V11 hosting platform, later referred to as NM Applications. In general the NM Applications are used for viewing and analyzing the images from NM modality.

The following analysis packages are offered by NM Applications (licensing might be applicable):

- AutoSPECT Pro
- NM Whole Body
- NM Cardiac
- NM Endocrine
- NM Esophagus
- NM Gastro Intestinal
- NM Renal
- NM Hepatobiliary
- NM VIEWER
- NM Lung
- Hybrid Calibration
- NM NU-1 NEMATools
- NM QCTools
- Automatic Registration
- JETPack
- AutoQuant
- Corridor 4DM Analysis
- EC toolbox
- NEURO-Q
- QBS

## 1.1. Revision History

The revision history below provides dates and differences among individual document versions.

**Table 1: Revision History**

| Document Version | Date of Issue | Status | Description |
|---|---|---|---|
| 00 | 20-June-2019 | Approved | Final Version |
| 01 | 12-Dec-2019 | Approved | Administration change in version number |

## 1.2. Terminology

| | |
|---|---|
| DICOM | Digital Imaging and Communications in Medicine |
| IOD | Information Object Definition |
| UID | Unique Identifier |
| VR | Value Representation |

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# 2. Data Specifications

## 2.1. Supported IOD's

This section specifies each IOD accepted and / or created by NM Applications.

ACCEPTED The applicable IOD is accepted for storage in the repository of the hosting platform and supported for import in NM Applications for viewing and analysis.

CREATED The NM Applications supports generation of derived data by using the applicable IOD and are able to store this data in the repository of the hosting platform.

**Table 2: Supported IOD's**

| IOD | | Support | |
|---|---|---|---|
| **Name** | **UID** | **ACCEPTED** | **CREATED** |
| Encapsulated PDF Storage | 1.2.840.10008.5.1.4.1.1.104.1 | No | Yes |
| Positron Emission Tomography Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.128 | Yes | Yes |
| CT Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.2 | Yes | No |
| Nuclear Medicine Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.20 | Yes | Yes |
| MR Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.4 | Yes | Yes |
| RT Structure Set Storage SOP Class | 1.2.840.10008.5.1.4.1.1.481.3 | Yes | Yes |
| Spatial Registration Storage | 1.2.840.10008.5.1.4.1.1.66.1 | Yes | Yes |
| Secondary Capture Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.7 | Yes | Yes |
| Multi-Frame Grayscale Byte Secondary Capture Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.7.2 | Yes | Yes |
| Multi-frame True Color Secondary Capture Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.7.4 | Yes | Yes |
| Key Object Selection Document | 1.2.840.10008.5.1.4.1.1.88.59 | Yes | Yes |

***Note:*** *All the NM applications are compliant with data from other vendors for import and display (multi-vendor compliant).*

### 2.1.1. Acceptance Criteria

This section specifies the acceptance criteria applied by NM Applications to which a dataset should adhere before it can be imported into the application.

All system model objects are accepted.

**Table 3: Accepted transfer syntaxes per IOD**

| IOD | | Transfer Syntax | |
|---|---|---|---|
| **Name** | **UID** | **Name** | **UID** |
| Positron Emission Tomography Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.128 | CT-private-ELE<br>Explicit VR Little Endian<br>Implicit VR Little Endian<br>JPEG Lossless, Non-Hierarchical, FOP (Process 14) | 1.3.46.670589.33.1.4.1<br>1.2.840.10008.1.2.1<br>1.2.840.10008.1.2<br>1.2.840.10008.1.2.4.70 |
| CT Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.2 | CT-private-ELE<br>Explicit VR Little Endian<br>Implicit VR Little Endian | 1.3.46.670589.33.1.4.1<br>1.2.840.10008.1.2.1<br>1.2.840.10008.1.2 |

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| | | | |
|---|---|---|---|
| | | JPEG Lossless, Non-Hierarchical, FOP (Process 14) | 1.2.840.10008.1.2.4.70 |
| Nuclear Medicine Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.20 | Explicit VR Little Endian<br>Implicit VR Little Endian | 1.2.840.10008.1.2.1<br>1.2.840.10008.1.2 |
| MR Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.4 | CT-private-ELE<br>Explicit VR Little Endian<br>Implicit VR Little Endian<br>JPEG Lossless, Non-Hierarchical, FOP (Process 14) | 1.3.46.670589.33.1.4.1<br>1.2.840.10008.1.2.1<br>1.2.840.10008.1.2<br>1.2.840.10008.1.2.4.70 |
| RT Structure Set Storage SOP Class | 1.2.840.10008.5.1.4.1.1.481.3 | Explicit VR Little Endian | 1.2.840.10008.1.2.1 |
| | | Implicit VR Little Endian | 1.2.840.10008.1.2 |
| Spatial Registration Storage | 1.2.840.10008.5.1.4.1.1.66.1 | Explicit VR Little Endian | 1.2.840.10008.1.2.1 |
| | | Implicit VR Little Endian | 1.2.840.10008.1.2 |
| Secondary Capture Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.7 | CT-private-ELE<br>Explicit VR Little Endian<br>Implicit VR Little Endian<br>JPEG Lossless, Non-Hierarchical, FOP (Process 14) | 1.3.46.670589.33.1.4.1<br>1.2.840.10008.1.2.1<br>1.2.840.10008.1.2<br>1.2.840.10008.1.2.4.70 |
| Multi-Frame Grayscale Byte Secondary Capture Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.7.2 | Explicit VR Little Endian<br>Implicit VR Little Endian | 1.2.840.10008.1.2.1<br>1.2.840.10008.1.2 |
| Multi-frame True Color Secondary Capture Image Storage | 1.2.840.10008.5.1.4.1.1.7.4 | Explicit VR Little Endian<br>Implicit VR Little Endian | 1.2.840.10008.1.2.1<br>1.2.840.10008.1.2 |
| Key Object Selection Document | 1.2.840.10008.5.1.4.1.1.88.59 | Explicit VR Little Endian<br>Implicit VR Little Endian | 1.2.840.10008.1.2.1<br>1.2.840.10008.1.2 |

## 2.1.2. Contents of Created IOD's

This section specifies in detail the attribute contents of created data objects. Attributes are grouped together by its corresponding module as specified by DICOM standard. Philips private attributes are excluded for specification.

Abbreviations used in the Module table for the column "Presence of Value" are:

| | |
|---|---|
| ALWAYS | The attribute is always present with a value |
| EMPTY | The attribute is always present without any value (attribute sent zero length) |
| VNAP | The attribute is always present and its Value is Not Always Present (attribute sent zero length if no value is present) |
| ANAP | The attribute is present under specified condition – if present then it will always have a value |

The abbreviations used in the Module table for the column "Source" are:

| | |
|---|---|
| AUTO | The attribute value is generated automatically |
| CONFIG | The attribute value source is a configurable parameter |
| COPY | The attribute value source is another SOP instance |
| FIXED | The attribute value is hard-coded in the application |
| IMPLICIT | The attribute value source is a user-implicit setting |
| MPPS | The attribute value is the same as that use for Modality Performed Procedure Step |
| MWL | The attribute value source is a Modality Worklist |
| USER | The attribute value source is explicit user input |

#### 2.1.2.1.1. Implementation Identifying Information

The value supplied for Implementation Class UID and version name are documented here.

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**Table 4: DICOM Implementation Class and Version for Created Instances**

| 3rd Party Application | Implementation Class UID | Implementation Version Name |
|---|---|---|
| Auto Quant | 1.2.276.0.7230010.3.0.3.5.4 | OFFIS_DCMTK_354 |
| Corridor4DM | 1.3.6.1.4.1.25189.1.5.2009 | INVIA1MAY2009 |
| EC Tool Box | 1.3.46.670589.50.1.9.0 | PORTAL_11.x" |
| Neuro Q | 1.3.46.670589.50.1.9.0 | PORTAL_11.x" |

#### 2.1.2.2. Encapsulated PDF Storage

**Table 5: IOD of Created Encapsulated PDF Storage Instances**

| Information Entity | Module | Presence Of Module |
|---|---|---|
| Patient | Patient Module | ALWAYS |
| Study | General Study Module | ALWAYS |
| Series | Encapsulated Document Series Module | ALWAYS |
| Equipment | General Equipment Module | ALWAYS |
| Equipment | SC Equipment Module | ALWAYS |
| Encapsulated Document | Encapsulated Document Module | ALWAYS |
| Encapsulated Document | SOP Common Module | ALWAYS |

**Table 6: Patient Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Referenced Patient Sequence | 0008,1120 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | COPY | - |
| Patient's Name | 0010,0010 | PN | | VNAP | COPY | - |
| Patient ID | 0010,0020 | LO | | VNAP | COPY | - |
| Patient's Birth Date | 0010,0030 | DA | | VNAP | COPY | - |
| Patient's Birth Time | 0010,0032 | TM | | ANAP | COPY | - |
| Patient's Sex | 0010,0040 | CS | | VNAP | COPY | - |
| Other Patient IDs | 0010,1000 | LO | | ANAP | COPY | - |
| Other Patient Names | 0010,1001 | PN | | ANAP | COPY | - |
| Ethnic Group | 0010,2160 | SH | | ANAP | COPY | - |
| Patient Comments | 0010,4000 | LT | | ANAP | COPY | - |
| Issuer of Patient ID | 0010,0021 | LO | | ANAP | COPY | - |

**Table 7: General Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Study Date | 0008,0020 | DA | | ANAP | COPY | - |
| Study Time | 0008,0030 | TM | | ANAP | COPY | - |
| Accession Number | 0008,0050 | SH | | ANAP | COPY | - |
| Referring Physician's Name | 0008,0090 | PN | | ANAP | COPY | - |
| Referring Physician Identification Sequence | 0008,0096 | SQ | | ANAP | COPY | - |
| Study Description | 0008,1030 | LO | | ANAP | COPY | - |
| Procedure Code Sequence | 0008,1032 | SQ | | ANAP | COPY | - |
| Physician(s) of Record | 0008,1048 | PN | | ANAP | COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Physician(s) of Record Identification Sequence | 0008,1049 | SQ | | ANAP | COPY | - |
| Name of Physician(s) Reading Study | 0008,1060 | PN | | ANAP | COPY | - |
| Physician(s) Reading Study Identification Sequence | 0008,1062 | SQ | | ANAP | COPY | - |
| Referenced Study Sequence | 0008,1110 | SQ | | ANAP | COPY | - |
| Study Instance UID | 0020,000D | UI | | ANAP | COPY | - |
| Study ID | 0020,0010 | SH | | ANAP | COPY | - |

**Table 8: Encapsulated Document Series Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Modality | 0008,0060 | CS | | ALWAYS | AUTO | - |
| Series Description | 0008,103E | LO | Reports | ANAP | AUTO | Reports |
| Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO | - |
| Series Number | 0020,0011 | IS | | ALWAYS | AUTO | - |
| Performed Procedure Step Start Date | 0040,0244 | DA | | ANAP | COPY | - |
| Performed Procedure Step Start Time | 0040,0245 | TM | | ANAP | COPY | - |
| Performed Procedure Step ID | 0040,0253 | SH | | ANAP | COPY | - |
| Performed Procedure Step Description | 0040,0254 | LO | | ANAP | AUTO | - |
| Performed Protocol Code Sequence | 0040,0260 | SQ | | ANAP | COPY | - |
| >Code Value | 0008,0100 | SH | | ANAP | COPY | - |
| >Coding Scheme Designator | 0008,0102 | SH | | ANAP | COPY | - |
| >Code Meaning | 0008,0104 | LO | | ANAP | AUTO | - |
| >Context Group Local Version | 0008,0107 | DT | | ANAP | COPY | - |
| >Context Group Extension Flag | 0008,010B | CS | | ANAP | COPY | - |

**Table 9: General Equipment Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Manufacturer | 0008,0070 | LO | Philips, Syntermed, Inc. | VNAP | FIXED | “Syntermed, Inc.” for “Neuro Q” Application. Else Philips. |
| Institution Name | 0008,0080 | LO | | ANAP | COPY | - |
| Institution Address | 0008,0081 | ST | | ANAP | COPY | - |
| Station Name | 0008,1010 | SH | | ANAP | COPY | - |
| Institutional Department Name | 0008,1040 | LO | | ANAP | COPY | - |
| Manufacturer's Model Name | 0008,1090 | LO | IntelliSpace Portal | ANAP | FIXED | Philips Portal |
| Device Serial Number | 0018,1000 | LO | | ANAP | COPY | - |
| Software Version(s) | 0018,1020 | LO | 11.x/AIM_DICOM_210 | ANAP | FIXED | “AIM_DICOM_210” for “Auto Quant” Application. Else “11.x” |
| Spatial Resolution | 0018,1050 | DS | | ANAP | COPY | - |
| Date of Last Calibration | 0018,1200 | DA | | ANAP | COPY | - |
| Time of Last Calibration | 0018,1201 | TM | | ANAP | COPY | - |
| Pixel Padding Value | 0028,0120 | US/SS | | ANAP | COPY | - |

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**Table 10: SC Equipment Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Modality | 0008,0060 | CS | | ANAP | AUTO | - |
| Conversion Type | 0008,0064 | CS | WSD | ALWAYS | AUTO | - |
| Secondary Capture Device Manufacturer | 0018,1016 | LO | Philips Medical Systems, Syntermed, Inc. | VNAP | COPY | “Syntermed, Inc.” for “Neuro Q” Application. Else Philips Medical Systems. |
| Secondary Capture Device Manufacturer's Model Name | 0018,1018 | LO | IntelliSpace Portal | ANAP | AUTO | Philips Portal |
| Secondary Capture Device Software Version(s) | 0018,1019 | LO | 11.x | ANAP | AUTO | - |

**Table 11: Encapsulated Document Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Content Date | 0008,0023 | DA | | VNAP | AUTO | - |
| Acquisition Datetime | 0008,002A | DT | | VNAP | AUTO | - |
| Content Time | 0008,0033 | TM | | VNAP | AUTO | - |
| Instance Number | 0020,0013 | IS | 1 | ALWAYS | AUTO | - |
| Burned In Annotation | 0028,0301 | CS | YES | ALWAYS | AUTO | - |
| Concept Name Code Sequence | 0040,A043 | SQ | | VNAP | AUTO | - |
| Document Title | 0042,0010 | ST | | VNAP | AUTO | - |
| Encapsulated Document | 0042,0011 | OB | | ALWAYS | AUTO | - |
| MIME Type of Encapsulated Document | 0042,0012 | LO | application/pdf | ALWAYS | AUTO | - |
| Source Instance Sequence | 0042,0013 | SQ | | ANAP | AUTO | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | AUTO | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | AUTO | - |

**Table 12: SOP Common Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Specific Character Set | 0008,0005 | CS | | ANAP | AUTO, COPY | - |
| Instance Creation Date | 0008,0012 | DA | | ANAP | AUTO | - |
| Instance Creation Time | 0008,0013 | TM | | ANAP | AUTO | - |
| Instance Creator UID | 0008,0014 | UI | | ANAP | AUTO | - |
| SOP Class UID | 0008,0016 | UI | 1.2.840.10008.5.1.4.1.1.104.1 | ALWAYS | COPY | - |
| SOP Instance UID | 0008,0018 | UI | | ALWAYS | AUTO | - |
| Timezone Offset From UTC | 0008,0201 | SH | | ANAP | COPY | - |

### 2.1.2.3. Positron Emission Tomography Image Storage SOP Class

**Table 13: IOD of Created Positron Emission Tomography Image Storage SOP Class Instances**

| Information Entity | Module | Presence Of Module |
|---|---|---|
| Patient | Patient Module | ALWAYS |
| Study | General Study Module | ALWAYS |
| Study | Patient Study Module | CONDITIONAL – If present in the source data |
| Series | General Series Module | ALWAYS |

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| | | |
|---|---|---|
| Series | PET Series Module | ALWAYS |
| Frame of Reference | Frame of Reference Module | ALWAYS |
| Equipment | General Equipment Module | ALWAYS |
| Image | General Image Module | ALWAYS |
| Image | Image Plane Module | ALWAYS |
| Image | Image Pixel Module | ALWAYS |
| Image | NM/PET Patient Orientation Module | ALWAYS |
| Image | PET Isotope Module | ALWAYS |
| Image | PET Multi-Gated Acquisition Module | CONDITIONAL – If present in the source data |
| Image | PET Image Module | ALWAYS |
| Image | Overlay Plane Module | CONDITIONAL – If present in the source data |
| Image | VOI LUT Module | CONDITIONAL – If present in the source data |
| Image | SOP Common Module | ALWAYS |
| | Extended DICOM and Private attributes | CONDITIONAL – If present in the source data |

**Table 14: Patient Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Referenced Patient Sequence | 0008,1120 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | COPY | - |
| Patient's Name | 0010,0010 | PN | | VNAP | COPY | - |
| Patient ID | 0010,0020 | LO | | VNAP | COPY | - |
| Patient's Birth Date | 0010,0030 | DA | | VNAP | COPY | - |
| Patient's Birth Time | 0010,0032 | TM | | ANAP | COPY | - |
| Patient's Sex | 0010,0040 | CS | | VNAP | COPY | - |
| Other Patient IDs | 0010,1000 | LO | | ANAP | COPY | - |
| Other Patient Names | 0010,1001 | PN | | ANAP | COPY | - |
| Ethnic Group | 0010,2160 | SH | | ANAP | COPY | - |
| Patient Comments | 0010,4000 | LT | | ANAP | COPY | - |
| Issuer of Patient ID | 0010,0021 | LO | | ANAP | COPY | - |

**Table 15: General Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Study Date | 0008,0020 | DA | | VNAP | COPY | - |
| Study Time | 0008,0030 | TM | | VNAP | COPY | - |
| Accession Number | 0008,0050 | SH | | VNAP | COPY | - |
| Referring Physician's Name | 0008,0090 | PN | | VNAP | COPY | - |
| Referring Physician Identification Sequence | 0008,0096 | SQ | | ANAP | COPY | - |
| Study Description | 0008,1030 | LO | | ANAP | COPY | - |
| Procedure Code Sequence | 0008,1032 | SQ | | ANAP | COPY | - |
| Physician(s) of Record | 0008,1048 | PN | | ANAP | COPY | - |
| Physician(s) of Record Identification Sequence | 0008,1049 | SQ | | ANAP | COPY | - |
| Name of Physician(s) Reading Study | 0008,1060 | PN | | ANAP | COPY | - |
| Physician(s) Reading Study Identification Sequence | 0008,1062 | SQ | | ANAP | COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Referenced Study Sequence | 0008,1110 | SQ | | ANAP | COPY | - |
| Study Instance UID | 0020,000D | UI | | ALWAYS | AUTO, COPY | - |
| Study ID | 0020,0010 | SH | | VNAP | AUTO, COPY | - |

**Table 16: Patient Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Admitting Diagnoses Description | 0008,1080 | LO | | ANAP | COPY | - |
| Admitting Diagnoses Code Sequence | 0008,1084 | SQ | | ANAP | COPY | - |
| Patient's Age | 0010,1010 | AS | | ANAP | COPY | - |
| Patient's Size | 0010,1020 | DS | | ANAP | COPY | - |
| Patient's Weight | 0010,1030 | DS | | ANAP | COPY | - |
| Occupation | 0010,2180 | SH | | ANAP | COPY | - |
| Additional Patient History | 0010,21B0 | LT | | ANAP | COPY | - |

**Table 17: General Series Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Series Date | 0008,0021 | DA | | ANAP | AUTO | - |
| Series Time | 0008,0031 | TM | | ANAP | AUTO | - |
| Modality | 0008,0060 | CS | | ALWAYS | COPY | - |
| Series Description | 0008,103E | LO | | ANAP | COPY | - |
| Performing Physician's Name | 0008,1050 | PN | | ANAP | COPY | - |
| Operators' Name | 0008,1070 | PN | | ANAP | COPY | - |
| Operator Identification Sequence | 0008,1072 | SQ | | ANAP | COPY | - |
| Referenced Performed Procedure Step Sequence | 0008,1111 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | COPY | - |
| Body Part Examined | 0018,0015 | CS | | ANAP | COPY | - |
| Protocol Name | 0018,1030 | LO | | ANAP | COPY | - |
| Patient Position | 0018,5100 | CS | | ANAP | COPY | - |
| Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO | - |
| Series Number | 0020,0011 | IS | | VNAP | AUTO | - |
| Laterality | 0020,0060 | CS | | ANAP | COPY | - |
| Smallest Pixel Value in Series | 0028,0108 | US/SS | | ANAP | AUTO | - |
| Largest Pixel Value in Series | 0028,0109 | US/SS | | ANAP | AUTO | - |
| Request Attributes Sequence | 0040,0275 | SQ | | ANAP | COPY | - |
| Performed Procedure Step Start Date | 0040,0244 | DA | | ANAP | COPY | - |
| Performed Procedure Step Start Time | 0040,0245 | TM | | ANAP | COPY | - |
| Performed Procedure Step Description | 0040,0254 | LO | | ANAP | COPY | - |
| Performed Protocol Code Sequence | 0040,0260 | SQ | | ANAP | COPY | - |
| Comments on the Performed Procedure Step | 0040,0280 | ST | | ANAP | COPY | - |

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**Table 18: PET Series Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Series Date | 0008,0021 | DA | | ALWAYS | AUTO | - |
| Series Time | 0008,0031 | TM | | ALWAYS | AUTO | - |
| Series Type | 0054,1000 | CS | | ALWAYS | AUTO | - |
| Acquisition Start Condition | 0018,0073 | CS | | ANAP | COPY | - |
| Acquisition Start Condition Data | 0018,0074 | IS | | ANAP | COPY | - |
| Acquisition Termination Condition | 0018,0071 | CS | | ANAP | COPY | - |
| Acquisition Termination Condition Data | 0018,0075 | IS | | ANAP | COPY | - |
| Attenuation Correction Method | 0054,1101 | LO | | ANAP | COPY | - |
| Axial Mash | 0054,1201 | IS | | ANAP | COPY | - |
| Coincidence Window Width | 0054,1210 | DS | | ANAP | COPY | - |
| Collimator Type | 0018,1181 | CS | | VNAP | COPY | - |
| Corrected Image | 0028,0051 | CS | | VNAP | COPY | - |
| Counts Source | 0054,1002 | CS | | ALWAYS | COPY | - |
| Decay Correction | 0054,1102 | CS | | ALWAYS | COPY | - |
| Field of View Dimension(s) | 0018,1149 | IS | | ANAP | COPY | - |
| Field of View Shape | 0018,1147 | CS | | ANAP | COPY | - |
| Gantry/Detector Tilt | 0018,1120 | DS | | ANAP | COPY | - |
| Number of Slices | 0054,0081 | US | | ALWAYS | COPY | - |
| Number of Time Slices | 0054,0101 | US | | ANAP | COPY | - |
| Randoms Correction Method | 0054,1100 | CS | | ANAP | COPY | - |
| Reconstruction Method | 0054,1103 | LO | | ANAP | COPY | - |
| Scatter Correction Method | 0054,1105 | LO | | ANAP | COPY | - |
| Transverse Mash | 0054,1202 | IS | | ANAP | COPY | - |
| Type of Detector Motion | 0054,0202 | CS | | ANAP | COPY | - |
| Units | 0054,1001 | CS | | ALWAYS | COPY | - |
| Energy Window Range Sequence | 0054,0013 | SQ | | ANAP | COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| >Energy Window Lower Limit | 0054,0014 | DS | | VNAP | COPY | - |
| >Energy Window Upper Limit | 0054,0015 | DS | | VNAP | COPY | - |
| Axial Acceptance | 0054,1200 | DS | | ANAP | COPY | - |
| Reprojection Method | 0054,1004 | CS | | ANAP | COPY | - |
| Number or R R Intervals | 0054,0061 | US | | ANAP | COPY | - |
| Reconstruction Diameter | 0018,1100 | DS | | ANAP | COPY | - |
| Convolution Kernel | 0018,1210 | SH | | ANAP | COPY | - |
| Detector lines of Response used | 0054,1104 | LO | | ANAP | COPY | - |
| Gantry/Detector Slew | 0018,1121 | DS | | ANAP | COPY | - |
| Collimator/grid Name | 0018,1180 | SH | | ANAP | COPY | - |
| Detector Element Size | 0054,1203 | DS | | ANAP | COPY | - |
| Secondary Counts Type | 0054,1220 | CS | | ANAP | COPY | - |

**Table 19: Frame of Reference Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Frame of Reference UID | 0020,0052 | UI | | ALWAYS | AUTO | - |
| Position Reference Indicator | 0020,1040 | LO | | VNAP | AUTO | - |

**Table 20: General Equipment Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Manufacturer | 0008,0070 | LO | Philips, Syntermed, Inc. | VNAP | FIXED | “Syntermed, Inc.” for “Neuro Q” Application. Else Philips. |
| Institution Name | 0008,0080 | LO | | ANAP | FIXED | - |
| Institution Address | 0008,0081 | ST | | ANAP | AUTO, COPY | - |
| Institutional Department Name | 0008,1040 | LO | | ANAP | AUTO, COPY | - |
| Manufacturer's Model Name | 0008,1090 | LO | IntelliSpace Portal | VNAP | FIXED | Philips Portal |
| Software Version (s) | 0018,1020 | LO | 11.x/ AIM_DICOM_210 | ANAP | FIXED | “AIM_DICOM_210” for “Auto Quant” Application. Else “11.x” |
| Station Name | 0008,1010 | SH | | ANAP | COPY | - |
| Spatial Resolution | 0018,1050 | DS | | ANAP | COPY | - |
| Date of Last Calibration | 0018,1200 | DA | | ANAP | COPY | - |
| Time of Last Calibration | 0018,1201 | TM | | ANAP | COPY | - |
| Pixel Padding Value | 0028,0120 | US/SS | | ANAP | COPY | - |

**Table 21: General Image Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Image Type | 0008,0008 | CS | | ANAP | COPY | - |
| Acquisition Date | 0008,0022 | DA | | ANAP | COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Content Date | 0008,0023 | DA | | ANAP | COPY | - |
| Acquisition Datetime | 0008,002A | DT | | ANAP | COPY | - |
| Acquisition Time | 0008,0032 | TM | | ANAP | COPY | - |
| Content Time | 0008,0033 | TM | | ANAP | COPY | - |
| Referenced Image Sequence | 0008,1140 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | COPY | - |
| Derivation Description | 0008,2111 | ST | | ANAP | COPY | - |
| Source Image Sequence | 0008,2112 | SQ | | ANAP | COPY | - |
| Derivation Code Sequence | 0008,9215 | SQ | | ANAP | COPY | - |
| Instance Number | 0020,0013 | IS | | VNAP | AUTO, COPY | - |
| Patient Orientation | 0020,0020 | CS | | ANAP | COPY | - |
| Images in Acquisition | 0020,1002 | IS | | ANAP | COPY | - |
| Quality Control Image | 0028,0300 | CS | | ANAP | COPY | - |
| Burned In Annotation | 0028,0301 | CS | | ANAP | COPY | - |
| Lossy Image Compression | 0028,2110 | CS | | ANAP | COPY | - |
| Lossy Image Compression Ratio | 0028,2112 | DS | | ANAP | COPY | - |
| Icon Image Sequence | 0088,0200 | SQ | | ANAP | COPY | - |
| >Samples per Pixel | 0028,0002 | US | | ALWAYS | COPY | - |
| >Photometric Interpretation | 0028,0004 | CS | | ALWAYS | COPY | - |
| >Planar Configuration | 0028,0006 | US | | ANAP | COPY | - |
| >Rows | 0028,0010 | US | | ALWAYS | COPY | - |
| >Columns | 0028,0011 | US | | ALWAYS | COPY | - |
| >Pixel Aspect Ratio | 0028,0034 | IS | | ANAP | COPY | - |
| >Bits Allocated | 0028,0100 | US | | ALWAYS | COPY | - |
| >Bits Stored | 0028,0101 | US | | ALWAYS | COPY | - |
| >High Bit | 0028,0102 | US | | ALWAYS | COPY | - |
| >Pixel Representation | 0028,0103 | US | | ALWAYS | COPY | - |
| >Smallest Image Pixel Value | 0028,0106 | US/SS | | ANAP | COPY | - |
| >Largest Image Pixel Value | 0028,0107 | US/SS | | ANAP | COPY | - |
| >Red Palette Color Lookup Table Descriptor | 0028,1101 | US/SS | | ANAP | COPY | - |
| >Green Palette Color Lookup Table Descriptor | 0028,1102 | US/SS | | ANAP | COPY | - |
| >Blue Palette Color Lookup Table Descriptor | 0028,1103 | US/SS | | ANAP | COPY | - |
| >Red Palette Color Lookup Table Data | 0028,1201 | OW | | ANAP | COPY | - |
| >Green Palette Color Lookup Table Data | 0028,1202 | OW | | ANAP | COPY | - |
| >Blue Palette Color Lookup Table Data | 0028,1203 | OW | | ANAP | COPY | - |
| >Pixel Data | 7FE0,0010 | OW/OB | | ANAP | COPY | - |
| Presentation LUT Shape | 2050,0020 | CS | | ANAP | COPY | - |

**Table 22: Image Plane Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Slice Thickness | 0018,0050 | DS | | VNAP | AUTO | - |
| Image Position (Patient) | 0020,0032 | DS | | ALWAYS | AUTO | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Image Orientation (Patient) | 0020,0037 | DS | | ALWAYS | AUTO | - |
| Pixel Spacing | 0028,0030 | DS | | ALWAYS | AUTO | - |
| Slice Location | 0020,1041 | DS | | ANAP | COPY | - |

**Table 23: Image Pixel Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Samples per Pixel | 0028,0002 | US | | ALWAYS | COPY | - |
| Photometric Interpretation | 0028,0004 | CS | | ALWAYS | COPY | - |
| Planar Configuration | 0028,0006 | US | | ANAP | COPY | - |
| Rows | 0028,0010 | US | | ALWAYS | AUTO, COPY | - |
| Columns | 0028,0011 | US | | ALWAYS | AUTO, COPY | - |
| Pixel Aspect Ratio | 0028,0034 | IS | | ANAP | COPY | - |
| Pixel Representation | 0028,0103 | US | | ALWAYS | AUTO, COPY | - |
| Smallest Image Pixel Value | 0028,0106 | US/SS | | ANAP | COPY | - |
| Largest Image Pixel Value | 0028,0107 | US/SS | | ANAP | COPY | - |
| Red Palette Color Lookup Table Descriptor | 0028,1101 | US/SS | | ANAP | COPY | - |
| Green Palette Color Lookup Table Descriptor | 0028,1102 | US/SS | | ANAP | COPY | - |
| Blue Palette Color Lookup Table Descriptor | 0028,1103 | US/SS | | ANAP | COPY | - |
| Red Palette Color Lookup Table Data | 0028,1201 | OW | | ANAP | COPY | - |
| Green Palette Color Lookup Table Data | 0028,1202 | OW | | ANAP | COPY | - |
| Blue Palette Color Lookup Table Data | 0028,1203 | OW | | ANAP | COPY | - |
| Pixel Data | 7FE0,0010 | OW/OB | | ALWAYS | AUTO, COPY | - |

**Table 24: NM/PET Patient Orientation Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Patient Gantry Relationship Code Sequence | 0054,0414 | SQ | | VNAP | COPY | - |
| >Code Meaning | 0008,0104 | LO | | ALWAYS | COPY | - |
| >Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |
| >Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |
| Patient Orientation Code Sequence | 0054,0410 | SQ | | VNAP | COPY | - |
| >Patient Orientation Modifier Code Sequence | 0054,0412 | SQ | | ALWAYS | COPY | - |
| >>Code Meaning | 0008,0104 | LO | | ALWAYS | COPY | - |
| >>Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |
| >>Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |
| >Code Meaning | 0008,0104 | LO | | ALWAYS | COPY | - |
| >Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |
| >Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |

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**Table 25: PET Isotope Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Radiopharmaceutical Information Sequence | 0054,0016 | SQ | | VNAP | COPY | - |
| >Radionuclide Half Life | 0018,1075 | DS | | ANAP | COPY | - |
| >Radionuclide Positron Fraction | 0018,1076 | DS | | ANAP | COPY | - |
| >Radionuclide Total Dose | 0018,1074 | DS | | ANAP | COPY | - |
| >Radiopharmaceutical | 0018,0031 | LO | | ANAP | COPY | - |
| >Radiopharmaceutical Start Time | 0018,1072 | TM | | ANAP | COPY | - |
| >Radiopharmaceutical Volume | 0018,1071 | DS | | ANAP | COPY | - |
| >Radionuclide Code Sequence | 0054,0300 | SQ | | ANAP | COPY | - |
| >>Code Meaning | 0008,0104 | LO | | ALWAYS | COPY | - |
| >>Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |
| >>Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |
| >Radiopharmaceutical Code Sequence | 0054,0304 | SQ | | ANAP | COPY | - |
| >>Code Meaning | 0008,0104 | LO | | VNAP | COPY | - |
| >>Code Value | 0008,0100 | SH | | VNAP | COPY | - |
| >>Coding Scheme Designator | 0008,0102 | SH | | VNAP | COPY | - |
| Interventional Drug Information Sequence | 0018,0026 | SQ | | ANAP | COPY | - |

**Table 26: PET Multi-Gated Acquisition Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Beat Rejection Flag | 0018,1080 | CS | | VNAP | COPY | - |
| Trigger Source or Type | 0018,1061 | LO | | ANAP | COPY | - |
| PVC Rejection | 0018,1085 | LO | | ANAP | COPY | - |
| Skip Beats | 0018,1086 | IS | | ANAP | COPY | - |
| Heart Rate | 0018,1088 | IS | | ANAP | COPY | - |
| Cardiac Framing Type | 0018,1064 | LO | | ANAP | COPY | - |

**Table 27: PET Image Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Image Type | 0008,0008 | CS | Value 1: DERIVED, SECONDARY | ALWAYS | AUTO | - |
| Samples per Pixel | 0028,0002 | US | | ALWAYS | AUTO | - |
| Photometric Interpretation | 0028,0004 | CS | | ALWAYS | AUTO | - |
| Bits Allocated | 0028,0100 | US | | ALWAYS | AUTO | - |
| Bits Stored | 0028,0101 | US | | ALWAYS | AUTO | - |
| High Bit | 0028,0102 | US | | ALWAYS | AUTO | - |
| Rescale Intercept | 0028,1052 | DS | | ALWAYS | AUTO | - |
| Rescale Slope | 0028,1053 | DS | | ALWAYS | AUTO | - |
| Acquisition Date | 0008,0022 | DA | | VNAP | COPY | - |
| Acquisition Time | 0008,0032 | TM | | VNAP | COPY | - |
| Actual Frame Duration | 0018,1242 | IS | | VNAP | COPY | - |
| Decay Factor | 0054,1321 | DS | | ANAP | COPY | - |
| Dose Calibration Factor | 0054,1322 | DS | | ANAP | COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Frame Reference Time | 0054,1300 | DS | | ALWAYS | COPY | - |
| Trigger Time | 0018,1060 | DS | | ANAP | COPY | - |
| Frame Time | 0018,1063 | DS | | ANAP | COPY | - |
| Low R R Value | 0018,1081 | IS | | ANAP | COPY | - |
| High R R Value | 0018,1082 | IS | | ANAP | COPY | - |
| Lossy Image Compression | 0028,2110 | CS | | ANAP | COPY | - |
| Image Index | 0054,1330 | US | | ALWAYS | COPY | - |
| Nominal Interval | 0018,1062 | IS | | ANAP | COPY | - |
| Intervals Acquired | 0018,1083 | IS | | ANAP | COPY | - |
| Intervals Rejected | 0018,1084 | IS | | ANAP | COPY | - |
| Primary (Prompts) Counts Accumulated | 0054,1310 | IS | | ANAP | COPY | - |
| Secondary Counts Accumulated | 0054,1311 | IS | | ANAP | COPY | - |
| Slice Sensitivity Factor | 0054,1320 | DS | | ANAP | COPY | - |
| Scatter Fraction Factor | 0054,1323 | DS | | ANAP | COPY | - |
| Dead Time Factor | 0054,1324 | DS | | ANAP | COPY | - |
| View Code Sequence | 0054,0220 | SQ | | ANAP | COPY | - |
| Slice Progression Direction | 0054,0500 | CS | | ANAP | COPY | - |
| Anatomic Region Sequence | 0008,2218 | SQ | | ANAP | COPY | - |

**Table 28: Overlay Plane Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Overlay Rows | 6000,0010 | US | | ALWAYS | AUTO | - |
| Overlay Columns | 6000,0011 | US | | ALWAYS | AUTO | - |
| Overlay Description | 6000,0022 | LO | | ANAP | AUTO | - |
| Overlay Type | 6000,0040 | CS | | ALWAYS | AUTO | - |
| Overlay Subtype | 6000,0045 | LO | | ANAP | AUTO | - |
| Overlay Origin | 6000,0050 | SS | | ALWAYS | AUTO | - |
| Overlay Bits Allocated | 6000,0100 | US | | ALWAYS | AUTO | - |
| Overlay Bit Position | 6000,0102 | US | | ALWAYS | AUTO | - |
| ROI Area | 6000,1301 | IS | | ANAP | AUTO | - |
| ROI Mean | 6000,1302 | DS | | ANAP | AUTO | - |
| ROI Standard Deviation | 6000,1303 | DS | | ANAP | AUTO | - |
| Overlay Label | 6000,1500 | LO | | ANAP | AUTO | - |
| Overlay Data | 6000,3000 | OW/OB | | ANAP | AUTO | - |

**Table 29: VOI LUT Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Window Center | 0028,1050 | DS | | ALWAYS | AUTO | - |
| Window Width | 0028,1051 | DS | | ANAP | AUTO | - |
| Window Center & Width Explanation | 0028,1055 | LO | | ANAP | AUTO | - |
| VOI LUT Sequence | 0028,3010 | SQ | | ANAP | AUTO | - |

**Table 30: SOP Common Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Instance Creation Date | 0008,0012 | DA | | VNAP | AUTO, COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Instance Creation Time | 0008,0013 | TM | | VNAP | AUTO, COPY | - |
| Instance Creator UID | 0008,0014 | UI | | ANAP | AUTO, COPY | - |
| Specific Character Set | 0008,0005 | CS | | ANAP | AUTO, COPY | - |
| SOP Class UID | 0008,0016 | UI | 1.2.840.10008.5.1.4.1.1.128 | ALWAYS | AUTO, COPY | - |
| SOP Instance UID | 0008,0018 | UI | | ALWAYS | AUTO | - |
| Timezone Offset From UTC | 0008,0201 | SH | | ANAP | COPY | - |

**Table 31: Extended DICOM and private attributes for Positron Emission Tomography Image Storage SOP Class Instances**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Frame Number | 2001,107C | IS | | ANAP | AUTO | - |
| Slice Index | 2001,10DE | DS | | ANAP | AUTO | - |
| Referenced Overlay Sequence | 0008,1130 | SQ | | ANAP | COPY | - |
| Reference Curve Sequence | 0008,1145 | SQ | | ANAP | COPY | - |
| Primary Anatomic Structure Sequence | 0008,2228 | SQ | | ANAP | COPY | - |
| Curve Dimensions | 50xx,0005 | US | | ANAP | AUTO | - |
| Number of Points | 50xx,0010 | US | | ANAP | AUTO | - |
| Type of Data | 50xx,0020 | CS | | ANAP | AUTO | - |
| Data Value Representation | 50xx,0103 | US | | ANAP | AUTO | - |
| Curve Data | 50xx,3000 | OB/OW | | ANAP | AUTO | - |
| Curve Description | 50xx,0022 | LO | | ANAP | AUTO | - |
| Axis Units | 50xx,0030 | SH | | ANAP | AUTO | - |
| Axis Labels | 50xx,0040 | SH | | ANAP | AUTO | - |
| Minimum Coordinate Value | 50xx,0104 | US | | ANAP | AUTO | - |
| Maximum Coordinate Value | 50xx,0105 | US | | ANAP | AUTO | - |
| Curve Range | 50xx,0106 | SH | | ANAP | AUTO | - |
| Curve Data Descriptor | 50xx,0110 | US | | ANAP | AUTO | - |
| Coordinate Start Value | 50xx,0112 | US | | ANAP | AUTO | - |
| Coordinate Step Value | 50xx,0114 | US | | ANAP | AUTO | - |
| Curve Label | 50xx,2500 | LO | | ANAP | AUTO | - |
| Curve Referenced Overlay Sequence | 50xx,2600 | SQ | | ANAP | AUTO | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ANAP | AUTO | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ANAP | AUTO | - |
| >Referenced Overlay Group | 50xx,2610 | US | | ANAP | AUTO | - |

### 2.1.2.4. Nuclear Medicine Image Storage SOP Class

**Table 32: IOD of Created Nuclear Medicine Image Storage SOP Class Instances**

| Information Entity | Module | Presence Of Module |
|---|---|---|
| Patient | Patient Module | ALWAYS |
| Study | General Study Module | ALWAYS |
| Study | Patient Study Module | ALWAYS |
| Series | General Series Module | ALWAYS |
| Series | NM/PET Patient Orientation Module | ALWAYS |
| Frame of Reference | Frame of Reference Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |

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| | | |
|---|---|---|
| Equipment | General Equipment Module | ALWAYS |
| Image | General Image Module | ALWAYS |
| Image | Image Pixel Module | ALWAYS |
| Image | Multi-Frame Module | ALWAYS |
| Image | Acquisition Context Module | |
| Image | NM Image Pixel Module | ALWAYS |
| Image | NM Multi-frame Module | ALWAYS |
| Image | NM Image Module | ALWAYS |
| Image | NM Isotope Module | ALWAYS |
| Image | NM Detector Module | ALWAYS |
| Image | NM Tomo Acquisition Module | CONDITIONAL |
| Image | NM Multi-gated Acquisition Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Image | NM Phase Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Image | NM Reconstruction Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Image | SOP Common Module | ALWAYS |
| Image | Extended Dicom and Private attributes | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |

**Table 33: Patient Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Patient's Name | 0010,0010 | PN | | VNAP | COPY | - |
| Patient ID | 0010,0020 | LO | | VNAP | COPY | - |
| Patient's Birth Date | 0010,0030 | DA | | VNAP | COPY | - |
| Patient's Birth Time | 0010,0032 | TM | | ANAP | COPY | - |
| Patient's Sex | 0010,0040 | CS | | VNAP | COPY | - |
| Other Patient IDs | 0010,1000 | LO | | ANAP | COPY | - |
| Ethnic Group | 0010,2160 | SH | | ANAP | COPY | - |
| Patient Comments | 0010,4000 | LT | | ANAP | COPY | - |

**Table 34: General Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Study Date | 0008,0020 | DA | | ALWAYS | COPY | - |
| Study Time | 0008,0030 | TM | | ALWAYS | COPY | - |
| Accession Number | 0008,0050 | SH | | VNAP | COPY | - |
| Referring Physician's Name | 0008,0090 | PN | | VNAP | COPY | - |
| Study Description | 0008,1030 | LO | | ANAP | COPY | - |
| Procedure Code Sequence | 0008,1032 | SQ | | ANAP | COPY | - |
| >Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |
| >Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |
| >Code Meaning | 0008,0104 | LO | | ALWAYS | COPY | - |
| Referenced Study Sequence | 0008,1110 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | COPY | - |
| Study Instance UID | 0020,000D | UI | | ALWAYS | COPY | - |
| Study ID | 0020,0010 | SH | | VNAP | COPY | - |

**Table 35: Patient Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Patient's Age | 0010,1010 | AS | | VNAP | COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Patient's Size | 0010,1020 | DS | | ANAP | COPY | - |
| Patient's Weight | 0010,1030 | DS | | ANAP | COPY | - |
| Additional Patient History | 0010,21B0 | LT | | ANAP | COPY | - |

**Table 36: General Series Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Series Date | 0008,0021 | DA | | ALWAYS | AUTO | - |
| Series Time | 0008,0031 | TM | | ALWAYS | AUTO | - |
| Modality | 0008,0060 | CS | NM | ALWAYS | FIXED | - |
| Series Description | 0008,103E | LO | | ANAP | AUTO | - |
| Performing Physician's Name | 0008,1050 | PN | | ANAP | COPY | - |
| Referenced Performed Procedure Step Sequence | 0008,1111 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | 1.2.840.10008.5.1.4.1.1.20 | ANAP | FIXED | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ANAP | COPY | - |
| Body Part Examined | 0018,0015 | CS | | ANAP | COPY | - |
| Protocol Name | 0018,1030 | LO | | ANAP | COPY | - |
| Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO | - |
| Series Number | 0020,0011 | IS | | VNAP | AUTO | - |
| Smallest Pixel Value in Series | 0028,0108 | US/SS | | ANAP | AUTO | - |
| Largest Pixel Value in Series | 0028,0109 | US/SS | | ANAP | AUTO | - |
| Request Attributes Sequence | 0040,0275 | SQ | | ANAP | COPY | - |
| >Scheduled Procedure Step Description | 0040,0007 | LO | | ANAP | COPY | - |
| >Scheduled Protocol Code Sequence | 0040,0008 | SQ | | ANAP | COPY | - |
| >>Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |
| >>Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |
| >>Code Meaning | 0008,0104 | LO | | ALWAYS | COPY | - |
| >Scheduled Procedure Step ID | 0040,0009 | SH | | ANAP | COPY | - |
| >Requested Procedure ID | 0040,1001 | SH | | ANAP | COPY | - |
| Performed Procedure Step Start Date | 0040,0244 | DA | | ANAP | COPY | - |
| Performed Procedure Step Start Time | 0040,0245 | TM | | ANAP | COPY | - |
| Performed Procedure Step ID | 0040,0253 | SH | | ANAP | COPY | - |
| Performed Procedure Step Description | 0040,0254 | LO | | ANAP | COPY | - |
| Performed Protocol Code Sequence | 0040,0260 | SQ | | ALWAYS | COPY | - |
| >Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |
| >Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |
| >Code Meaning | 0008,0104 | LO | | ANAP | COPY | - |

**Table 37: NM/PET Patient Orientation Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Patient Orientation Code Sequence | 0054,0410 | SQ | | ANAP | COPY | - |
| >Patient Orientation Modifier Code Sequence | 0054,0412 | SQ | | ANAP | COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| >>Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |
| >>Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |
| >>Code Meaning | 0008,0104 | LO | | ALWAYS | COPY | - |
| >Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |
| >Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |
| >Code Meaning | 0008,0104 | LO | | ALWAYS | COPY | - |
| Patient Gantry Relationship Code Sequence | 0054,0414 | SQ | | ANAP | COPY | - |
| >Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |
| >Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |
| >Code Meaning | 0008,0104 | LO | | ALWAYS | COPY | - |

**Table 38: Frame of Reference Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Frame of Reference UID | 0020,0052 | UI | | ANAP | COPY | - |
| Position Reference Indicator | 0020,1040 | LO | | ANAP | COPY | - |

**Table 39: General Equipment Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Manufacturer | 0008,0070 | LO | Philips, Syntermed, Inc. | VNAP | FIXED | “Syntermed, Inc.” for “Neuro Q” Application. Else Philips. |
| Institution Name | 0008,0080 | LO | | ANAP | COPY | - |
| Station Name | 0008,1010 | SH | | ANAP | COPY | - |
| Manufacturer's Model Name | 0008,1090 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal |
| Device Serial Number | 0018,1000 | LO | | ANAP | COPY | - |
| Software Version(s) | 0018,1020 | LO | 11.x/ AIM_DICOM_210 | ANAP | FIXED | “AIM_DICOM_210” for “Auto Quant” Application. Else “11.x” |
| Spatial Resolution | 0018,1050 | DS | | ANAP | COPY | - |

**Table 40: General Image Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Image Type | 0008,0008 | CS | | ANAP | COPY | - |
| Acquisition Date | 0008,0022 | DA | | ALWAYS | COPY | - |
| Content Date | 0008,0023 | DA | | ALWAYS | AUTO | - |
| Acquisition Time | 0008,0032 | TM | | ALWAYS | COPY | - |
| Content Time | 0008,0033 | TM | | ANAP | AUTO | - |
| Acquisition Number | 0020,0012 | IS | | ANAP | COPY | - |
| Instance Number | 0020,0013 | IS | | VNAP | AUTO | - |
| Images in Acquisition | 0020,1002 | IS | 0 | ALWAYS | FIXED | 0 |
| Quality Control Image | 0028,0300 | CS | | VNAP | IMPLICIT | - |

**Table 41: Image Pixel Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Samples per Pixel | 0028,0002 | US | | ALWAYS | COPY | - |
| Photometric Interpretation | 0028,0004 | CS | | ALWAYS | COPY | - |
| Planar Configuration | 0028,0006 | US | | ANAP | AUTO | - |
| Rows | 0028,0010 | US | | ALWAYS | USER | - |
| Columns | 0028,0011 | US | | ALWAYS | USER | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Pixel Aspect Ratio | 0028,0034 | IS | | ANAP | FIXED | Applied value: (1\1) |
| Bits Stored | 0028,0101 | US | | ALWAYS | IMPLICIT | - |
| High Bit | 0028,0102 | US | | ALWAYS | IMPLICIT | - |
| Pixel Representation | 0028,0103 | US | | ALWAYS | IMPLICIT | Applied value: 0 |
| Smallest Image Pixel Value | 0028,0106 | US/SS | | ALWAYS | AUTO | - |
| Largest Image Pixel Value | 0028,0107 | US/SS | | ALWAYS | AUTO | - |
| Pixel Data | 7FE0,0010 | OW/OB | | ALWAYS | AUTO | - |

**Table 42: Multi-Frame Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Number of Frames | 0028,0008 | IS | | ALWAYS | IMPLICIT | - |

**Table 43: Acquisition Context Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Acquisition Context Sequence | 0040,0555 | SQ | | ANAP | COPY | - |
| >Value Type | 0040,A040 | CS | CODE | ALWAYS | FIXED | - |
| >Concept Name Code Sequence | 0040,A043 | SQ | | ALWAYS | COPY | - |
| >>Code Value | 0008,0100 | SH | 109055 | ALWAYS | FIXED | - |
| >>Coding Scheme Designator | 0008,0102 | SH | DCM | ALWAYS | FIXED | - |
| >>Code Meaning | 0008,0104 | LO | Patient State | ALWAYS | FIXED | - |
| >Concept Code Sequence | 0040,A168 | SQ | | ALWAYS | COPY | - |
| >>Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |
| >>Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |
| >>Code Meaning | 0008,0104 | LO | | ALWAYS | COPY | - |

**Table 44: NM Image Pixel Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Samples per Pixel | 0028,0002 | US | 1 | ALWAYS | FIXED | - |
| Photometric Interpretation | 0028,0004 | CS | MONOCHROME2 | ALWAYS | FIXED | - |
| Pixel Spacing | 0028,0030 | DS | | ALWAYS | IMPLICIT | - |
| Bits Allocated | 0028,0100 | US | 16 | ALWAYS | FIXED | - |
| Bits Stored | 0028,0101 | US | 16 | ALWAYS | FIXED | - |
| High Bit | 0028,0102 | US | 15 | ALWAYS | FIXED | - |

**Table 45: NM Multi-frame Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Number of Frames | 0028,0008 | IS | | ALWAYS | COPY | - |
| Frame Increment Pointer | 0028,0009 | AT | | ALWAYS | AUTO | - |
| Energy Window Vector | 0054,0010 | US | | ANAP | AUTO | - |
| Number of Energy Windows | 0054,0011 | US | | ALWAYS | COPY | - |
| Detector Vector | 0054,0020 | US | | ANAP | AUTO | - |
| Number of Detectors | 0054,0021 | US | | ALWAYS | COPY | - |
| Phase Vector | 0054,0030 | US | | ANAP | AUTO | - |
| Number of Phases | 0054,0031 | US | | ANAP | USER, IMPLICIT | - |
| Rotation Vector | 0054,0050 | US | | ANAP | AUTO | - |
| Number of Rotations | 0054,0051 | US | | ANAP | COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| R-R Interval Vector | 0054,0060 | US | | ANAP | AUTO | - |
| Number of R-R Intervals | 0054,0061 | US | | ANAP | COPY | - |
| Time Slot Vector | 0054,0070 | US | | ANAP | AUTO | - |
| Number of Time Slots | 0054,0071 | US | | ANAP | COPY | - |
| Slice Vector | 0054,0080 | US | | ANAP | AUTO | - |
| Number of Slices | 0054,0081 | US | | ANAP | AUTO | - |
| Angular View Vector | 0054,0090 | US | | ANAP | AUTO | - |
| Time Slice Vector | 0054,0100 | US | | ANAP | AUTO | - |

**Table 46: NM Image Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Image Type | 0008,0008 | CS | | ALWAYS | IMPLICIT | - |
| Counts Accumulated | 0018,0070 | IS | | VNAP | AUTO | - |
| Acquisition Termination Condition | 0018,0071 | CS | | VNAP | COPY | - |
| Trigger Source or Type | 0018,1061 | LO | | ANAP | COPY | - |
| Table Height | 0018,1130 | DS | | ANAP | COPY | - |
| Table Traverse | 0018,1131 | DS | | ANAP | COPY | - |
| Actual Frame Duration | 0018,1242 | IS | | ANAP | COPY | - |
| Processing Function | 0018,5020 | LO | | ANAP | COPY | - |
| Image ID | 0054,0400 | SH | | ANAP | COPY | - |
| Count Rate | 0018,1243 | IS | | ANAP | COPY | - |
| Scan Velocity | 0018,1300 | DS | | ANAP | COPY | - |
| Whole Body Technique | 0018,1301 | CS | | ANAP | IMPLICIT | - |
| Scan Length | 0018,1302 | IS | | ANAP | COPY | - |
| Corrected Image | 0028,0051 | CS | | ANAP | IMPLICIT | - |

**Table 47: NM Isotope Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Energy Window Information Sequence | 0054,0012 | SQ | | ALWAYS | COPY | - |
| >Energy Window Range Sequence | 0054,0013 | SQ | | ALWAYS | COPY | - |
| >>Energy Window Lower Limit | 0054,0014 | DS | | ALWAYS | COPY | - |
| >>Energy Window Upper Limit | 0054,0015 | DS | | ALWAYS | COPY | - |
| >Energy Window Name | 0054,0018 | SH | | ALWAYS | COPY | - |
| Radiopharmaceutical Information Sequence | 0054,0016 | SQ | | ALWAYS | COPY | - |
| >Radiopharmaceutical | 0018,0031 | LO | | ANAP | COPY | - |
| >Radiopharmaceutical Volume | 0018,1071 | DS | 0.0 | ANAP | FIXED | - |
| >Radiopharmaceutical Start Time | 0018,1072 | TM | | ANAP | COPY | - |
| >Radiopharmaceutical Stop Time | 0018,1073 | TM | | EMPTY | FIXED | - |
| >Radionuclide Total Dose | 0018,1074 | DS | | ANAP | COPY | - |
| >Radionuclide Code Sequence | 0054,0300 | SQ | | ALWAYS | COPY | - |
| >>Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |
| >>Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |
| >>Code Meaning | 0008,0104 | LO | | ALWAYS | COPY | - |

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|---|---|---|---|---|---|---|
| >Radiopharmaceutical Code Sequence | 0054,0304 | SQ | | ANAP | COPY | - |
| >>Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |
| >>Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |
| >>Code Meaning | 0008,0104 | LO | | ALWAYS | COPY | - |

**Table 48: NM Detector Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Detector Information Sequence | 0054,0022 | SQ | | ALWAYS | IMPLICIT | - |
| >Gantry/Detector Tilt | 0018,1120 | DS | | ANAP | COPY | - |
| >Radial Position | 0018,1142 | DS | | ANAP | COPY | - |
| >Center of Rotation Offset | 0018,1145 | DS | 0.0 | ALWAYS | FIXED | - |
| >Field of View Shape | 0018,1147 | CS | RECTANGLE | ALWAYS | FIXED | - |
| >Field of View Dimension(s) | 0018,1149 | IS | | ANAP | COPY | - |
| >Collimator/grid Name | 0018,1180 | SH | | ALWAYS | COPY | - |
| >Collimator Type | 0018,1181 | CS | | ALWAYS | COPY | - |
| >Focal Distance | 0018,1182 | IS | 0 | ALWAYS | FIXED | - |
| >X Focus Center | 0018,1183 | DS | 0.0 | ALWAYS | FIXED | - |
| >Y Focus Center | 0018,1184 | DS | 0.0 | ALWAYS | FIXED | - |
| >Image Position (Patient) | 0020,0032 | DS | | VNAP | IMPLICIT | - |
| >Image Orientation (Patient) | 0020,0037 | DS | | VNAP | IMPLICIT | - |
| >Zoom Factor | 0028,0031 | DS | | ANAP | COPY | - |
| >Zoom Center | 0028,0032 | DS | 0.0 | ALWAYS | FIXED | - |
| >Start Angle | 0054,0200 | DS | | ANAP | COPY | - |
| >View Code Sequence | 0054,0220 | SQ | | ANAP | IMPLICIT | - |
| >>View Modifier Code Sequence | 0054,0222 | SQ | | ANAP | COPY | - |
| >>>Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |
| >>>Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |
| >>>Code Meaning | 0008,0104 | LO | | ALWAYS | COPY | - |
| >>Code Value | 0008,0100 | SH | | ALWAYS | IMPLICIT | - |
| >>Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | IMPLICIT | - |
| >>Code Meaning | 0008,0104 | LO | | ALWAYS | IMPLICIT | - |

**Table 49: NM Tomo Acquisition Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Rotation Information Sequence | 0054,0052 | SQ | | ANAP | COPY | - |
| >Distance Source to Detector | 0018,1110 | DS | | ANAP | COPY | - |
| >Table Height | 0018,1130 | DS | | ALWAYS | COPY | - |
| >Table Traverse | 0018,1131 | DS | | ALWAYS | COPY | - |
| >Rotation Direction | 0018,1140 | CS | | ALWAYS | COPY | - |
| >Radial Position | 0018,1142 | DS | | ALWAYS | COPY | - |
| >Scan Arc | 0018,1143 | DS | | ALWAYS | COPY | - |
| >Angular Step | 0018,1144 | DS | | ALWAYS | COPY | - |
| >Actual Frame Duration | 0018,1242 | IS | | ALWAYS | COPY | - |
| >Number of Frames in Rotation | 0054,0053 | US | | ALWAYS | COPY | - |
| >Start Angle | 0054,0200 | DS | | ALWAYS | COPY | - |

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**Table 50: NM Multi-gated Acquisition Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Beat Rejection Flag | 0018,1080 | CS | | ANAP | COPY | - |
| PVC Rejection | 0018,1085 | LO | | ANAP | COPY | - |
| Skip Beats | 0018,1086 | IS | | ANAP | COPY | - |
| Heart Rate | 0018,1088 | IS | | ANAP | COPY | - |
| Gated Information Sequence | 0054,0062 | SQ | | ANAP | IMPLICIT | - |
| >Trigger Time | 0018,1060 | DS | 0.0 | ALWAYS | FIXED | - |
| >Data Information Sequence | 0054,0063 | SQ | | ALWAYS | IMPLICIT | - |
| >>Nominal Interval | 0018,1062 | IS | | ANAP | AUTO | - |
| >>Frame Time | 0018,1063 | DS | | ALWAYS | USER, IMPLICIT | - |
| >>Low R-R Value | 0018,1081 | IS | | ANAP | AUTO | - |
| >>High R-R Value | 0018,1082 | IS | | ANAP | AUTO | - |
| >>Intervals Acquired | 0018,1083 | IS | | ALWAYS | AUTO | - |
| >>Intervals Rejected | 0018,1084 | IS | | ANAP | AUTO | - |
| >>Time Slot Information Sequence | 0054,0072 | SQ | | ALWAYS | IMPLICIT | - |
| >>>Time Slot Time | 0054,0073 | DS | | ALWAYS | IMPLICIT | - |

**Table 51: NM Phase Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Phase Information Sequence | 0054,0032 | SQ | | ANAP | IMPLICIT | - |
| >Actual Frame Duration | 0018,1242 | IS | | ALWAYS | USER, AUTO | - |
| >Number of Frames in Phase | 0054,0033 | US | | ALWAYS | USER | - |
| >Phase Delay | 0054,0036 | IS | 0 | ALWAYS | FIXED | - |
| >Pause Between Frames | 0054,0038 | IS | 0 | ALWAYS | FIXED | - |
| >Number of Triggers in Phase | 0054,0211 | US | 0 | ALWAYS | FIXED | - |

**Table 52: NM Reconstruction Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Slice Thickness | 0018,0050 | DS | | ANAP | CONFIG, IMPLICIT | - |
| Spacing Between Slices | 0018,0088 | DS | | ANAP | AUTO | - |
| Convolution Kernel | 0018,1210 | SH | | ANAP | IMPLICIT | - |
| Slice Progression Direction | 0054,0500 | CS | | ANAP | AUTO | - |

**Table 53: SOP Common Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Specific Character Set | 0008,0005 | CS | ISO_IR 100 | ALWAYS | FIXED | |
| Instance Creation Date | 0008,0012 | DA | | ALWAYS | AUTO | - |
| Instance Creation Time | 0008,0013 | TM | | ALWAYS | AUTO | - |
| Instance Creator UID | 0008,0014 | UI | | ALWAYS | CONFIG | - |
| SOP Class UID | 0008,0016 | UI | 1.2.840.10008.5.1.4.1.1.20 | ALWAYS | FIXED | 1.2.840.10008.5.1.4.1.1.20 |
| SOP Instance UID | 0008,0018 | UI | | ALWAYS | AUTO | - |

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**Table 54: Extended DICOM and private attributes for Nuclear Medicine Image Storage SOP Class Instances**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Medical Alerts | 0010,2000 | LO | | ANAP | COPY | - |
| Contrast Allergies | 0010,2110 | LO | | ANAP | COPY | - |
| Pregnancy Status | 0010,21C0 | US | | ANAP | COPY | - |
| Special Needs | 0038,0050 | LO | | ANAP | COPY | - |
| Patient State | 0038,0500 | LO | | ANAP | COPY | - |
| Real World Value Mapping Sequence | 0040,9096 | SQ | | ANAP | AUTO | - |
| > Real World First Value Mapped | 0040,9216 | US | | ANAP | AUTO | - |
| > Real World Last Value Mapped | 0040,9211 | US | | ANAP | AUTO | - |
| > Real World Value Intercept | 0040,9224 | FD | 0 | ANAP | FIXED | - |
| > Real World Value Slope | 0040,9225 | FD | | ANAP | AUTO | - |

### 2.1.2.5. MR Image Storage SOP Class

**Table 55: IOD of Created MR Image Storage SOP Class Instances**

| Information Entity | Module | Presence Of Module |
|---|---|---|
| Patient | Patient Module | ALWAYS |
| Study | General Study Module | ALWAYS |
| Study | Patient Study Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Series | General Series Module | ALWAYS |
| Frame of Reference | Frame of Reference Module | ALWAYS |
| Equipment | General Equipment Module | ALWAYS |
| Image | General Image Module | ALWAYS |
| Image | Image Plane Module | ALWAYS |
| Image | Image Pixel Module | ALWAYS |
| Image | MR Image Module | ALWAYS |
| Image | Overlay Plane Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Image | VOI LUT Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Image | SOP Common Module | ALWAYS |
| Image | Contrast/Bolus Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Image | Extended Dicom and Private attributes | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |

**Table 56: Patient Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Referenced Patient Sequence | 0008,1120 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | COPY | - |
| Patient's Name | 0010,0010 | PN | | VNAP | COPY | - |
| Patient ID | 0010,0020 | LO | | VNAP | COPY | - |
| Patient's Birth Date | 0010,0030 | DA | | VNAP | COPY | - |
| Patient's Birth Time | 0010,0032 | TM | | ANAP | COPY | - |
| Patient's Sex | 0010,0040 | CS | | VNAP | COPY | - |
| Other Patient IDs | 0010,1000 | LO | | ANAP | COPY | - |
| Other Patient Names | 0010,1001 | PN | | ANAP | COPY | - |

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|---|---|---|---|---|---|---|
| Ethnic Group | 0010,2160 | SH | | ANAP | COPY | - |
| Patient Comments | 0010,4000 | LT | | ANAP | COPY | - |
| Issuer of Patient ID | 0010,0021 | LO | | ANAP | COPY | - |

**Table 57: General Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Study Date | 0008,0020 | DA | | VNAP | COPY | - |
| Study Time | 0008,0030 | TM | | VNAP | COPY | - |
| Accession Number | 0008,0050 | SH | | VNAP | COPY | - |
| Referring Physician's Name | 0008,0090 | PN | | VNAP | COPY | - |
| Referring Physician Identification Sequence | 0008,0096 | SQ | | ANAP | COPY | - |
| Study Description | 0008,1030 | LO | | ANAP | COPY | - |
| Procedure Code Sequence | 0008,1032 | SQ | | ANAP | COPY | - |
| Physician(s) of Record | 0008,1048 | PN | | ANAP | COPY | - |
| Physician(s) of Record Identification Sequence | 0008,1049 | SQ | | ANAP | COPY | - |
| Name of Physician(s) Reading Study | 0008,1060 | PN | | ANAP | COPY | - |
| Physician(s) Reading Study Identification Sequence | 0008,1062 | SQ | | ANAP | COPY | - |
| Referenced Study Sequence | 0008,1110 | SQ | | ANAP | COPY | - |
| Study Instance UID | 0020,000D | UI | | ALWAYS | AUTO | - |
| Study ID | 0020,0010 | SH | | VNAP | AUTO | - |

**Table 58: Patient Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Admitting Diagnoses Description | 0008,1080 | LO | | ANAP | COPY | - |
| Admitting Diagnoses Code Sequence | 0008,1084 | SQ | | ANAP | COPY | - |
| Patient's Age | 0010,1010 | AS | | ANAP | COPY | - |
| Patient's Size | 0010,1020 | DS | | ANAP | COPY | - |
| Patient's Weight | 0010,1030 | DS | | ANAP | COPY | - |
| Occupation | 0010,2180 | SH | | ANAP | COPY | - |
| Additional Patient History | 0010,21B0 | LT | | ANAP | COPY | - |

**Table 59: General Series Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Series Date | 0008,0021 | DA | | ANAP | AUTO | - |
| Series Time | 0008,0031 | TM | | ANAP | AUTO | - |
| Modality | 0008,0060 | CS | | ALWAYS | COPY | - |
| Series Description | 0008,103E | LO | | ANAP | COPY | - |
| Performing Physician's Name | 0008,1050 | PN | | ANAP | COPY | - |
| Operators' Name | 0008,1070 | PN | | ANAP | COPY | - |
| Operator Identification Sequence | 0008,1072 | SQ | | ANAP | COPY | - |
| Referenced Performed Procedure Step Sequence | 0008,1111 | SQ | | ANAP | COPY | - |

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|---|---|---|---|---|---|---|
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | COPY | - |
| Body Part Examined | 0018,0015 | CS | | ANAP | COPY | - |
| Protocol Name | 0018,1030 | LO | | ANAP | COPY | - |
| Patient Position | 0018,5100 | CS | | ANAP | COPY | - |
| Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO | - |
| Series Number | 0020,0011 | IS | | VNAP | AUTO | - |
| Laterality | 0020,0060 | CS | | ANAP | COPY | - |
| Smallest Pixel Value in Series | 0028,0108 | US /SS | | ANAP | COPY | - |
| Largest Pixel Value in Series | 0028,0109 | US /SS | | ANAP | COPY | - |
| Request Attributes Sequence | 0040,0275 | SQ | | ANAP | COPY | - |
| Performed Procedure Step Start Date | 0040,0244 | DA | | ANAP | COPY | - |
| Performed Procedure Step Start Time | 0040,0245 | TM | | ANAP | COPY | - |
| Performed Procedure Step Description | 0040,0254 | LO | | ANAP | COPY | - |
| Performed Protocol Code Sequence | 0040,0260 | SQ | | ANAP | COPY | - |
| Comments on the Performed Procedure Step | 0040,0280 | ST | | ANAP | COPY | - |

**Table 60: Frame of Reference Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Frame of Reference UID | 0020,0052 | UI | | ALWAYS | COPY | - |
| Position Reference Indicator | 0020,1040 | LO | | VNAP | COPY | - |

**Table 61: General Equipment Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Manufacturer | 0008,0070 | LO | Philips, Syntermed, Inc. | VNAP | FIXED | “Syntermed, Inc.” for “Neuro Q” Application. Else Philips. |
| Institution Name | 0008,0080 | LO | | ANAP | COPY | - |
| Institution Address | 0008,0081 | ST | | ANAP | COPY | - |
| Station Name | 0008,1010 | SH | | ANAP | COPY | - |
| Institutional Department Name | 0008,1040 | LO | | ANAP | COPY | - |
| Manufacturer's Model Name | 0008,1090 | LO | IntelliSpace Portal | ANAP | FIXED | Philips Portal |
| Device Serial Number | 0018,1000 | LO | | ANAP | COPY | - |
| Software Version(s) | 0018,1020 | LO | 11.x/ AIM_DICOM_210 | ANAP | FIXED | “AIM_DICOM_210” for “Auto Quant” Application. Else “11.x” |
| Spatial Resolution | 0018,1050 | DS | | ANAP | COPY | - |
| Date of Last Calibration | 0018,1200 | DA | | ANAP | COPY | - |
| Time of Last Calibration | 0018,1201 | TM | | ANAP | COPY | - |
| Pixel Padding Value | 0028,0120 | US /SS | | ANAP | COPY | - |

**Table 62: General Image Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Acquisition Date | 0008,0022 | DA | | ANAP | COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Content Date | 0008,0023 | DA | | ANAP | COPY | - |
| Acquisition Datetime | 0008,002A | DT | | ANAP | COPY | - |
| Acquisition Time | 0008,0032 | TM | | ANAP | COPY | - |
| Content Time | 0008,0033 | TM | | ANAP | COPY | - |
| Referenced Image Sequence | 0008,1140 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | COPY | - |
| Derivation Description | 0008,2111 | ST | | ANAP | COPY | - |
| Source Image Sequence | 0008,2112 | SQ | | ANAP | COPY | - |
| Derivation Code Sequence | 0008,9215 | SQ | | ANAP | COPY | - |
| Instance Number | 0020,0013 | IS | | VNAP | AUTO, COPY | - |
| Patient Orientation | 0020,0020 | CS | | ANAP | COPY | - |
| Images in Acquisition | 0020,1002 | IS | | ANAP | COPY | - |
| Quality Control Image | 0028,0300 | CS | | ANAP | COPY | - |
| Burned In Annotation | 0028,0301 | CS | | ANAP | COPY | - |
| Lossy Image Compression | 0028,2110 | CS | | ANAP | COPY | - |
| Lossy Image Compression Ratio | 0028,2112 | DS | | ANAP | COPY | - |
| Icon Image Sequence | 0088,0200 | SQ | | ANAP | COPY | - |
| >Samples per Pixel | 0028,0002 | US | | ALWAYS | COPY | - |
| >Photometric Interpretation | 0028,0004 | CS | | ALWAYS | COPY | - |
| >Planar Configuration | 0028,0006 | US | | ANAP | COPY | - |
| >Rows | 0028,0010 | US | | ALWAYS | COPY | - |
| >Columns | 0028,0011 | US | | ALWAYS | COPY | - |
| >Pixel Aspect Ratio | 0028,0034 | IS | | ANAP | COPY | - |
| >Bits Allocated | 0028,0100 | US | | ALWAYS | COPY | - |
| >Bits Stored | 0028,0101 | US | | ALWAYS | COPY | - |
| >High Bit | 0028,0102 | US | | ALWAYS | COPY | - |
| >Pixel Representation | 0028,0103 | US | | ALWAYS | COPY | - |
| >Smallest Image Pixel Value | 0028,0106 | US /SS | | ANAP | COPY | - |
| >Largest Image Pixel Value | 0028,0107 | US /SS | | ANAP | COPY | - |
| >Red Palette Color Lookup Table Descriptor | 0028,1101 | US /SS | | ANAP | COPY | - |
| >Green Palette Color Lookup Table Descriptor | 0028,1102 | US /SS | | ANAP | COPY | - |
| >Blue Palette Color Lookup Table Descriptor | 0028,1103 | US /SS | | ANAP | COPY | - |
| >Red Palette Color Lookup Table Data | 0028,1201 | O W | | ANAP | COPY | - |
| >Green Palette Color Lookup Table Data | 0028,1202 | O W | | ANAP | COPY | - |
| >Blue Palette Color Lookup Table Data | 0028,1203 | O W | | ANAP | COPY | - |
| >Pixel Data | 7FE0,0010 | O W/ OB | | ANAP | COPY | - |
| Presentation LUT Shape | 2050,0020 | CS | | ANAP | COPY | - |

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**Table 63: Image Plane Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Slice Thickness | 0018,0050 | DS | | VNAP | COPY | - |
| Image Position (Patient) | 0020,0032 | DS | | ALWAYS | COPY | - |
| Image Orientation (Patient) | 0020,0037 | DS | | ALWAYS | COPY | - |
| Slice Location | 0020,1041 | DS | | ANAP | COPY | - |
| Pixel Spacing | 0028,0030 | DS | | ALWAYS | COPY | - |

**Table 64: Image Pixel Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Planar Configuration | 0028,0006 | US | | ANAP | COPY | - |
| Rows | 0028,0010 | US | | ALWAYS | AUTO, COPY | - |
| Columns | 0028,0011 | US | | ALWAYS | AUTO, COPY | - |
| Pixel Aspect Ratio | 0028,0034 | IS | | ANAP | COPY | - |
| Bits Stored | 0028,0101 | US | | ALWAYS | COPY | - |
| High Bit | 0028,0102 | US | | ALWAYS | COPY | - |
| Pixel Representation | 0028,0103 | US | | ALWAYS | COPY | - |
| Smallest Image Pixel Value | 0028,0106 | US/SS | | ANAP | COPY | - |
| Largest Image Pixel Value | 0028,0107 | US/SS | | ANAP | COPY | - |
| Pixel Data | 7FE0,0010 | OW/OB | | ANAP | COPY | - |

**Table 65: MR Image Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Image Type | 0008,0008 | CS | | ALWAYS | AUTO | - |
| Scanning Sequence | 0018,0020 | CS | | ALWAYS | COPY | - |
| Sequence Variant | 0018,0021 | CS | | ALWAYS | COPY | - |
| Scan Options | 0018,0022 | CS | | VNAP | COPY | - |
| MR Acquisition Type | 0018,0023 | CS | | VNAP | COPY | - |
| Sequence Name | 0018,0024 | SH | | ANAP | COPY | - |
| Angio Flag | 0018,0025 | CS | | ANAP | COPY | - |
| Repetition Time | 0018,0080 | DS | | ANAP | COPY | - |
| Echo Time | 0018,0081 | DS | | VNAP | COPY | - |
| Inversion Time | 0018,0082 | DS | | ANAP | COPY | - |
| Number of Averages | 0018,0083 | DS | | ANAP | COPY | - |
| Imaging Frequency | 0018,0084 | DS | | ANAP | COPY | - |
| Imaged Nucleus | 0018,0085 | SH | | ANAP | COPY | - |
| Echo Number(s) | 0018,0086 | IS | | ANAP | COPY | - |
| Magnetic Field Strength | 0018,0087 | DS | | ANAP | COPY | - |
| Spacing Between Slices | 0018,0088 | DS | | ANAP | COPY | - |
| Number of Phase Encoding Steps | 0018,0089 | IS | | ANAP | COPY | - |
| Echo Train Length | 0018,0091 | IS | | VNAP | COPY | - |
| Percent Sampling | 0018,0093 | DS | | ANAP | COPY | - |
| Percent Phase Field of View | 0018,0094 | DS | | ANAP | COPY | - |
| Pixel Bandwidth | 0018,0095 | DS | | ANAP | COPY | - |
| Trigger Time | 0018,1060 | DS | | ANAP | COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Nominal Interval | 0018,1062 | IS | | ANAP | COPY | - |
| Beat Rejection Flag | 0018,1080 | CS | | ANAP | COPY | - |
| Low R-R Value | 0018,1081 | IS | | ANAP | COPY | - |
| High R-R Value | 0018,1082 | IS | | ANAP | COPY | - |
| Intervals Acquired | 0018,1083 | IS | | ANAP | COPY | - |
| Intervals Rejected | 0018,1084 | IS | | ANAP | COPY | - |
| PVC Rejection | 0018,1085 | LO | | ANAP | COPY | - |
| Skip Beats | 0018,1086 | IS | | ANAP | COPY | - |
| Heart Rate | 0018,1088 | IS | | ANAP | COPY | - |
| Cardiac Number of Images | 0018,1090 | IS | | ANAP | COPY | - |
| Trigger Window | 0018,1094 | IS | | ANAP | COPY | - |
| Reconstruction Diameter | 0018,1100 | DS | | ANAP | COPY | - |
| Receive Coil Name | 0018,1250 | SH | | ANAP | COPY | - |
| Transmit Coil Name | 0018,1251 | SH | | ANAP | COPY | - |
| Acquisition Matrix | 0018,1310 | US | | ANAP | COPY | - |
| In-plane Phase Encoding Direction | 0018,1312 | CS | | ANAP | COPY | - |
| Flip Angle | 0018,1314 | DS | | ANAP | COPY | - |
| SAR | 0018,1316 | DS | | ANAP | COPY | - |
| dB/dt | 0018,1318 | DS | | ANAP | COPY | - |
| Temporal Position Identifier | 0020,0100 | IS | | ANAP | COPY | - |
| Number of Temporal Positions | 0020,0105 | IS | | ANAP | COPY | - |
| Temporal Resolution | 0020,0110 | DS | | ANAP | COPY | - |
| Samples per Pixel | 0028,0002 | US | | ALWAYS | COPY | - |
| Photometric Interpretation | 0028,0004 | CS | MONOCHROME2 | ALWAYS | COPY | - |
| Bits Allocated | 0028,0100 | US | | ALWAYS | COPY | - |

**Table 66: Overlay Plane Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Overlay Rows | 6000,0010 | US | | ALWAYS | AUTO | - |
| Overlay Columns | 6000,0011 | US | | ALWAYS | AUTO | - |
| Overlay Description | 6000,0022 | LO | | ANAP | AUTO | - |
| Overlay Type | 6000,0040 | CS | | ALWAYS | AUTO | - |
| Overlay Subtype | 6000,0045 | LO | | ANAP | AUTO | - |
| Overlay Origin | 6000,0050 | SS | | ALWAYS | AUTO | - |
| Overlay Bits Allocated | 6000,0100 | US | | ALWAYS | AUTO | - |
| Overlay Bit Position | 6000,0102 | US | | ALWAYS | AUTO | - |
| ROI Area | 6000,1301 | IS | | ANAP | AUTO | - |
| ROI Mean | 6000,1302 | DS | | ANAP | AUTO | - |
| ROI Standard Deviation | 6000,1303 | DS | | ANAP | AUTO | - |
| Overlay Label | 6000,1500 | LO | | ANAP | AUTO | - |
| Overlay Data | 6000,3000 | OW/ OB | | ALWAYS | AUTO | - |

**Table 67: VOI LUT Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Window Center | 0028,1050 | DS | | ANAP | AUTO | - |
| Window Width | 0028,1051 | DS | | ANAP | AUTO | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Window Center & Width Explanation | 0028,1055 | LO | | ANAP | AUTO | - |

**Table 68: SOP Common Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Specific Character Set | 0008,0005 | CS | | ANAP | AUTO, COPY | - |
| Instance Creation Date | 0008,0012 | DA | | ANAP | AUTO | - |
| Instance Creation Time | 0008,0013 | TM | | ANAP | AUTO | - |
| Instance Creator UID | 0008,0014 | UI | | ANAP | AUTO | - |
| SOP Class UID | 0008,0016 | UI | 1.2.840.10008.5.1.4.1.1.4 | ALWAYS | COPY | - |
| SOP Instance UID | 0008,0018 | UI | | ALWAYS | AUTO | - |
| Timezone Offset From UTC | 0008,0201 | SH | | ANAP | COPY | - |

**Table 69: Contrast/Bolus Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Contrast/Bolus Agent | 0018,0010 | LO | | VNAP | COPY | - |
| Contrast/Bolus Agent Sequence | 0018,0012 | SQ | | ANAP | COPY | - |
| Contrast/Bolus Administration Route Sequence | 0018,0014 | SQ | | ANAP | COPY | - |
| >Additional Drug Sequence | 0018,002A | SQ | | ANAP | COPY | - |
| Contrast/Bolus Route | 0018,1040 | LO | | ANAP | COPY | - |
| Contrast/Bolus Volume | 0018,1041 | DS | | ANAP | COPY | - |
| Contrast/Bolus Start Time | 0018,1042 | TM | | ANAP | COPY | - |
| Contrast/Bolus Stop Time | 0018,1043 | TM | | ANAP | COPY | - |
| Contrast/Bolus Total Dose | 0018,1044 | DS | | ANAP | COPY | - |
| Contrast Flow Rate | 0018,1046 | DS | | ANAP | COPY | - |
| Contrast Flow Duration | 0018,1047 | DS | | ANAP | COPY | - |
| Contrast/Bolus Ingredient | 0018,1048 | CS | | ANAP | COPY | - |
| Contrast/Bolus Ingredient Concentration | 0018,1049 | DS | | ANAP | COPY | - |

**Table 70: Extended DICOM and private attributes for MR Image Storage SOP Class Instances**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Rescale Intercept | 0028,1052 | DS | | ANAP | COPY | - |
| Rescale Slope | 0028,1053 | DS | | ANAP | COPY | - |
| Curve Dimensions | 50xx,0005 | US | | ANAP | AUTO | - |
| Number of Points | 50xx,0010 | US | | ANAP | AUTO | - |
| Type of Data | 50xx,0020 | CS | | ANAP | AUTO | - |
| Data Value Representation | 50xx,0103 | US | | ANAP | AUTO | - |
| Curve Data | 50xx,3000 | OB/OW | | ANAP | AUTO | - |
| Curve Description | 50xx,0022 | LO | | ANAP | AUTO | - |
| Axis Units | 50xx,0030 | SH | | ANAP | AUTO | - |
| Axis Labels | 50xx,0040 | SH | | ANAP | AUTO | - |
| Minimum Coordinate Value | 50xx,0104 | US | | ANAP | AUTO | - |
| Maximum Coordinate Value | 50xx,0105 | US | | ANAP | AUTO | - |
| Curve Range | 50xx,0106 | SH | | ANAP | AUTO | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Curve Data Descriptor | 50xx,0110 | US | | ANAP | AUTO | - |
| Coordinate Start Value | 50xx,0112 | US | | ANAP | AUTO | - |
| Coordinate Step Value | 50xx,0114 | US | | ANAP | AUTO | - |
| Curve Label | 50xx,2500 | LO | | ANAP | AUTO | - |
| Referenced Overlay Sequence | 50xx,2600 | SQ | | ANAP | AUTO | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ANAP | AUTO | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ANAP | AUTO | - |
| >Referenced Overlay Group | 50xx,2610 | US | | ANAP | AUTO | - |

#### 2.1.2.6. RT Structure Set Storage SOP Class

**Table 71: IOD of Created RT Structure Set Storage SOP Class Instances**

| Information Entity | Module | Presence Of Module |
|---|---|---|
| Patient | Patient Module | ALWAYS |
| Study | General Study Module | ALWAYS |
| Study | Patient Study Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Series | RT Series Module | ALWAYS |
| Equipment | General Equipment Module | ALWAYS |
| Structure Set | Structure Set Module | ALWAYS |
| Structure Set | ROI Contour Module | ALWAYS |
| Structure Set | RT ROI Observations Module | ALWAYS |
| Structure Set | SOP Common Module | ALWAYS |
| | Extended DICOM and Private attributes | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |

**Table 72: Patient Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Referenced Patient Sequence | 0008,1120 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | COPY | - |
| Patient's Name | 0010,0010 | PN | | ALWAYS | COPY | - |
| Patient ID | 0010,0020 | LO | | ALWAYS | COPY | - |
| Patient's Birth Date | 0010,0030 | DA | | VNAP | COPY | - |
| Patient's Birth Time | 0010,0032 | TM | | ANAP | COPY | - |
| Patient's Sex | 0010,0040 | CS | | VNAP | COPY | - |
| Other Patient IDs | 0010,1000 | LO | | ANAP | COPY | - |
| Other Patient Names | 0010,1001 | PN | | ANAP | COPY | - |
| Ethnic Group | 0010,2160 | SH | | ANAP | COPY | - |
| Patient Comments | 0010,4000 | LT | | ANAP | COPY | - |
| Issuer of Patient ID | 0010,0021 | LO | | ANAP | COPY | - |

**Table 73: General Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Study Date | 0008,0020 | DA | | VNAP | COPY | - |
| Study Time | 0008,0030 | TM | | VNAP | COPY | - |
| Accession Number | 0008,0050 | SH | | VNAP | COPY | - |
| Referring Physician's Name | 0008,0090 | PN | | VNAP | COPY | - |
| Referring Physician Identification Sequence | 0008,0096 | SQ | | ANAP | COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Study Description | 0008,1030 | LO | | ANAP | COPY | - |
| Procedure Code Sequence | 0008,1032 | SQ | | ANAP | COPY | - |
| Physician(s) of Record | 0008,1048 | PN | | ANAP | COPY | - |
| Physician(s) of Record Identification Sequence | 0008,1049 | SQ | | ANAP | COPY | - |
| Name of Physician(s) Reading Study | 0008,1060 | PN | | ANAP | COPY | - |
| Physician(s) Reading Study Identification Sequence | 0008,1062 | SQ | | ANAP | COPY | - |
| Referenced Study Sequence | 0008,1110 | SQ | | ANAP | COPY | - |
| Study Instance UID | 0020,000D | UI | | ALWAYS | AUTO | - |
| Study ID | 0020,0010 | SH | | VNAP | AUTO | - |

**Table 74: Patient Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Admitting Diagnoses Description | 0008,1080 | LO | | ANAP | COPY | - |
| Admitting Diagnoses Code Sequence | 0008,1084 | SQ | | ANAP | COPY | - |
| Patient's Age | 0010,1010 | AS | | ANAP | COPY | - |
| Patient's Size | 0010,1020 | DS | | ANAP | COPY | - |
| Patient's Weight | 0010,1030 | DS | | ANAP | COPY | - |
| Occupation | 0010,2180 | SH | | ANAP | COPY | - |
| Additional Patient History | 0010,21B0 | LT | | ANAP | COPY | - |

**Table 75: RT Series Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Modality | 0008,0060 | CS | | ALWAYS | FIXED | - |
| Series Description | 0008,103E | LO | | ANAP | AUTO/ USER | - |
| Operators' Name | 0008,1070 | | | | | |
| Series Description Code Sequence | 0008,103F | SQ | | ANAP | COPY | - |
| Referenced Performed Procedure Step Sequence | 0008,1111 | SQ | | ANAP | COPY | - |
| Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO | - |
| Series Number | 0020,0011 | IS | | VNAP | AUTO | - |
| Request Attributes Sequence | 0040,0275 | SQ | | ANAP | COPY | - |
| Performed Procedure Step Start Date | 0040,0244 | DA | | ANAP | COPY | - |
| Performed Procedure Step Start Time | 0040,0245 | TM | | ANAP | COPY | - |
| Performed Procedure Step ID | 0040,0253 | SH | | ANAP | COPY | - |
| Performed Procedure Step Description | 0040,0254 | LO | | ANAP | COPY | - |
| Performed Protocol Code Sequence | 0040,0260 | SQ | | ANAP | COPY | - |
| Comments on the Performed Procedure Step | 0040,0280 | ST | | ANAP | COPY | - |

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**Table 76: General Equipment Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Manufacturer | 0008,0070 | LO | Philips, Syntermed, Inc. | VNAP | FIXED | “Syntermed, Inc.” for “Neuro Q” Application. Else Philips. |
| Institution Name | 0008,0080 | LO | | ANAP | COPY | - |
| Institution Address | 0008,0081 | ST | | ANAP | COPY | - |
| Station Name | 0008,1010 | SH | | ANAP | COPY | - |
| Institutional Department Name | 0008,1040 | LO | | ANAP | COPY | - |
| Manufacturer's Model Name | 0008,1090 | LO | IntelliSpace Portal | ALWAYS | FIXED | Philips Portal |
| Device Serial Number | 0018,1000 | LO | | ANAP | COPY | - |
| Software Version(s) | 0018,1020 | LO | 11.x/ AIM_DICOM_210 | ANAP | FIXED | “AIM_DICOM_210” for “Auto Quant” Application. Else “11.X” |
| Spatial Resolution | 0018,1050 | DS | | ANAP | COPY | - |
| Date of Last Calibration | 0018,1200 | DA | | ANAP | COPY | - |
| Time of Last Calibration | 0018,1201 | TM | | ANAP | COPY | - |
| Pixel Padding Value | 0028,0120 | US/SS | | ANAP | COPY | - |

**Table 77: Structure Set Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Instance Number | 0020,0013 | IS | | ANAP | AUTO | - |
| Structure Set Label | 3006,0002 | SH | | ALWAYS | AUTO | - |
| Structure Set Name | 3006,0004 | LO | | ANAP | AUTO | - |
| Structure Set Description | 3006,0006 | ST | | ANAP | AUTO | - |
| Structure Set Date | 3006,0008 | DA | | VNAP | AUTO | - |
| Structure Set Time | 3006,0009 | TM | | VNAP | AUTO | - |
| Referenced Frame of Reference Sequence | 3006,0010 | SQ | | ANAP | AUTO | - |
| >Frame of Reference UID | 0020,0052 | UI | | ALWAYS | AUTO | - |
| >RT Referenced Study Sequence | 3006,0012 | SQ | | ANAP | AUTO | - |
| >>RT Referenced Series Sequence | 3006,0014 | SQ | | ALWAYS | AUTO | - |
| >>>Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO | - |
| >>>Contour Image Sequence | 3006,0016 | SQ | | ALWAYS | AUTO | - |
| >>>>Referenced Frame Number | 0008,1160 | IS | | ANAP | AUTO | - |
| >>>>Referenced Segment Number | 0062,000B | US | | ANAP | AUTO | - |
| >>>>Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | AUTO | - |
| >>>>Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | AUTO | - |
| >>Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | AUTO | - |
| >>Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | AUTO | - |
| >Frame of Reference Relationship Sequence | 3006,00C0 | SQ | | ANAP | AUTO | - |
| Structure Set ROI Sequence | 3006,0020 | SQ | | ANAP | AUTO | - |
| >Derivation Code Sequence | 0008,9215 | SQ | | ANAP | AUTO | - |
| >ROI Number | 3006,0022 | IS | | ALWAYS | AUTO | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| >Referenced Frame of Reference UID | 3006,0024 | UI | | ALWAYS | AUTO | - |
| >ROI Name | 3006,0026 | LO | | VNAP | AUTO | - |
| >ROI Description | 3006,0028 | ST | | ANAP | AUTO | - |
| >ROI Volume | 3006,002C | DS | | ANAP | AUTO | - |
| >ROI Generation Algorithm | 3006,0036 | CS | | VNAP | AUTO | - |
| >ROI Generation Description | 3006,0038 | LO | | ANAP | AUTO | - |

**Table 78: ROI Contour Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| ROI Contour Sequence | 3006,0039 | SQ | | ALWAYS | AUTO | - |
| >ROI Display Color | 3006,002A | IS | | ANAP | AUTO | - |
| >Contour Sequence | 3006,0040 | SQ | | ANAP | AUTO | - |
| >>Contour Image Sequence | 3006,0016 | SQ | | ANAP | AUTO | - |
| >>>Referenced Frame Number | 0008,1160 | IS | | ANAP | AUTO | - |
| >>>Referenced Segment Number | 0062,000B | US | | ANAP | AUTO | - |
| >>>Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | AUTO | - |
| >>>Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | AUTO | - |
| >>Contour Geometric Type | 3006,0042 | CS | | ALWAYS | AUTO | - |
| >>Contour Slab Thickness | 3006,0044 | DS | | ANAP | AUTO | - |
| >>Contour Offset Vector | 3006,0045 | DS | | ANAP | AUTO | - |
| >>Number of Contour Points | 3006,0046 | IS | | ALWAYS | AUTO | - |
| >>Contour Number | 3006,0048 | IS | | ANAP | AUTO | - |
| >>Attached Contours | 3006,0049 | IS | | ANAP | AUTO | - |
| >>Contour Data | 3006,0050 | DS | | ALWAYS | AUTO | - |
| >Referenced ROI Number | 3006,0084 | IS | | ALWAYS | AUTO | - |

**Table 79: RT ROI Observations Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| RT ROI Observations Sequence | 3006,0080 | SQ | | ALWAYS | AUTO | - |
| >RT Related ROI Sequence | 3006,0030 | SQ | | ANAP | AUTO | - |
| >> Referenced ROI Number | 3006,0084 | IS | | ALWAYS | AUTO | - |
| >>RT ROI Relationship | 3006,0033 | IS | | ANAP | AUTO | - |
| >Observation Number | 3006,0082 | IS | | ALWAYS | AUTO | - |
| >Referenced ROI Number | 3006,0084 | IS | | ALWAYS | AUTO | - |
| >ROI Observation Label | 3006,0085 | SH | | ANAP | AUTO | - |
| >RT ROI Identification Code Sequence | 3006,0086 | SQ | | ANAP | AUTO | - |
| >ROI Observation Description | 3006,0088 | ST | | ANAP | AUTO | - |
| >Related RT ROI Observations Sequence | 3006,00A0 | SQ | | ANAP | AUTO | - |
| >> Observation Number | 3006,0082 | | | ALWAYS | AUTO | - |
| >RT ROI Interpreted Type | 3006,00A4 | CS | | VNAP | AUTO | - |
| >ROI Interpreter | 3006,00A6 | PN | | VNAP | AUTO | - |
| >Material ID | 300A,00E1 | SH | | ANAP | AUTO | - |
| >ROI Physical Properties Sequence | 3006,00B0 | SQ | | ANAP | AUTO | - |
| >>ROI Physical Property | 3006,00B2 | CS | | ALWAYS | AUTO | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| >>ROI Elemental Composition Sequence | 3006,00B6 | SQ | | ANAP | AUTO | - |
| >>>ROI Elemental Composition Atomic Number | 3006,00B7 | US | | ALWAYS | AUTO | - |
| >>>ROI Elemental Composition Atomic Mass Fraction | 3006,00B8 | FL | | ALWAYS | AUTO | - |
| >>ROI Physical Property Value | 3006,00B4 | DS | | ALWAYS | AUTO | - |

**Table 80: SOP Common Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Specific Character Set | 0008,0005 | CS | | ANAP | AUTO, COPY | - |
| Instance Creation Date | 0008,0012 | DA | | ANAP | AUTO | - |
| Instance Creation Time | 0008,0013 | TM | | ANAP | AUTO | - |
| Instance Creator UID | 0008,0014 | UI | | ANAP | AUTO | - |
| SOP Class UID | 0008,0016 | UI | 1.2.840.10008.5.1.4.1.1.481.3 | ALWAYS | COPY | - |
| SOP Instance UID | 0008,0018 | UI | | ALWAYS | AUTO | - |
| Timezone Offset From UTC | 0008,0201 | SH | | ANAP | COPY | - |

**Table 81: Extended DICOM and private attributes for RT Structure Set Storage SOP Class Instances**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Series Date | 0008,0021 | DA | | ANAP | AUTO | - |
| Series Time | 0008,0031 | TM | | ANAP | AUTO | - |
| Modalities in Study | 0008,0061 | CS | | ANAP | AUTO | - |
| Patient Orientation | 0020,0020 | CS | | ANAP | AUTO | - |
| Secondary Capture Device ID | 0018,1010 | LO | | ANAP | AUTO | - |
| Secondary Capture Device Manufacturer | 0018,1016 | LO | Philips Medical Systems | ALWAYS | FIXED | - |
| Secondary Capture Device Manufacturer's Model name | 0018,1018 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal |
| Secondary Capture Device Software Version(s) | 0018,1019 | LO | 11.x | ANAP | FIXED | - |

### 2.1.2.7. Spatial Registration Storage SOP Class

**Table 82: IOD of Created Spatial Registration Storage SOP Class Instances**

| Information Entity | Module | Presence Of Module |
|---|---|---|
| Patient | Patient Module | ALWAYS |
| Study | General Study Module | ALWAYS |
| Series | General Series Module | ALWAYS |
| Series | Spatial Registration Series Module | ALWAYS |
| Frame of Reference | Frame of Reference Module | ALWAYS |
| Spatial Registration | Spatial Registration Module | ALWAYS |
| Image | SOP Common Module | ALWAYS |

**Table 83: Patient Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Ethnic Group | 0010,2160 | SH | | ANAP | AUTO | - |
| Patient Comments | 0010,4000 | LT | | ANAP | AUTO | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Patient ID | 0010,0020 | LO | | ANAP | AUTO | - |
| Patient's Birth Date | 0010,0030 | DA | | ANAP | AUTO | - |
| Patient's Name | 0010,0010 | PN | | ANAP | AUTO | - |
| Patient's Sex | 0010,0040 | CS | | ANAP | AUTO | - |
| Other Patient IDs | 0010,1000 | LO | | ANAP | COPY | |

**Table 84: General Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Accession Number | 0008,0050 | SH | | ANAP | COPY | - |
| Name of Physician(s) Reading Study | 0008,1060 | PN | | ANAP | COPY | - |
| Referring Physician's Name | 0008,0090 | PN | | ANAP | COPY | - |
| Study Date | 0008,0020 | DA | | ANAP | COPY | - |
| Study Description | 0008,1030 | LO | | ANAP | COPY | - |
| Study ID | 0020,0010 | SH | | ANAP | COPY | - |
| Study Instance UID | 0020,000D | UI | | ANAP | COPY | - |
| Study Time | 0008,0030 | TM | | ANAP | COPY | - |
| Referenced Study Sequence | 0008,1110 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ANAP | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ANAP | COPY | - |

**Table 85: Patient Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Admitting Diagnoses Description | 0008,1080 | LO | | ANAP | COPY | - |
| Admitting Diagnoses Code Sequence | 0008,1084 | SQ | | ANAP | COPY | - |
| Patient's Age | 0010,1010 | AS | | ANAP | COPY | - |
| Patient's Size | 0010,1020 | DS | | ANAP | COPY | - |
| Patient's Weight | 0010,1030 | DS | | ANAP | COPY | - |
| Occupation | 0010,2180 | SH | | ANAP | COPY | - |
| Additional Patient History | 0010,21B0 | LT | | ANAP | COPY | - |

**Table 86: General Series Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Series Date | 0008,0021 | DA | | ALWAYS | AUTO | - |
| Series Description | 0008,103E | LO | | ALWAYS | AUTO | - |
| Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO | - |
| Series Number | 0020,0011 | IS | | ALWAYS | AUTO | - |
| Series Time | 0008,0031 | TM | | ALWAYS | AUTO | - |
| Referenced Performed Procedure Step Sequence | 0008,1111 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ANAP | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ANAP | COPY | - |
| Request Attributes Sequence | 0040,0275 | SQ | | ANAP | COPY | - |
| >Requested Procedure ID | 0040,1001 | SH | | ANAP | COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| >Scheduled Procedure Step Description | 0040,0007 | LO | | ANAP | COPY | - |
| >Scheduled Procedure Step ID | 0040,0009 | SH | | ANAP | COPY | - |
| >Scheduled Protocol Code Sequence | 0040,0008 | SQ | | ANAP | COPY | - |
| >>Code Meaning | 0008,0104 | LO | | ANAP | COPY | - |
| >>Code Value | 0008,0100 | SH | | ANAP | COPY | - |
| >>Coding Scheme Designator | 0008,0102 | SH | | ANAP | COPY | - |
| Performed Procedure Step ID | 0040,0253 | SH | | ANAP | COPY | - |

**Table 87: Spatial Registration Series Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Modality | 0008,0060 | CS | | ALWAYS | AUTO | - |

**Table 88: Frame of Reference Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Frame of Reference UID | 0020,0052 | UI | | ALWAYS | AUTO | - |
| Position Reference Indicator | 0020,1040 | LO | | VNAP | AUTO | - |

**Table 89: Spatial Registration Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Content Date | 0008,0023 | DA | | ALWAYS | AUTO | - |
| Content Time | 0008,0033 | TM | | ALWAYS | AUTO | - |
| Registration Sequence | 0070,0308 | SQ | | ALWAYS | AUTO | - |
| >Frame of Reference UID | 0020,0052 | UI | | ANAP | AUTO | - |
| >Matrix Registration Sequence | 0070,0309 | SQ | | ALWAYS | AUTO | - |
| >>Matrix Sequence | 0070,030A | SQ | | ALWAYS | AUTO | - |
| >>>Frame of Reference Transformation Matrix | 3006,00C6 | DS | | ALWAYS | AUTO | - |
| >>>Frame of Reference Transformation Matrix Type | 0070,030C | CS | | ALWAYS | AUTO | - |
| >>Registration Type Code Sequence | 0070,030D | SQ | | ALWAYS | AUTO | - |
| >>>Code Value | 0008,0100 | SH | | ALWAYS | AUTO | - |
| Content Creator's Name | 0070,0084 | PN | | VNAP | AUTO | - |
| Content Description | 0070,0081 | LO | | VNAP | AUTO | - |
| Content Label | 0070,0080 | CS | | ALWAYS | AUTO | - |
| Instance Number | 0020,0013 | IS | | ALWAYS | AUTO | - |

**Table 90: Common Instance Reference Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Referenced Series Sequence | 0008,1115 | SQ | | ALWAYS | AUTO, COPY | - |

**Table 91: SOP Common Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Specific Character Set | 0008,0005 | CS | | ANAP | AUTO | |
| Instance Number | 0020,0013 | IS | | ALWAYS | AUTO | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| SOP Class UID | 0008,0016 | UI | 1.2.840.10008.5.1.4.1.1.66.1 | ALWAYS | AUTO | - |
| SOP Instance UID | 0008,0018 | UI | | ALWAYS | AUTO | - |

### 2.1.2.8. Secondary Capture Image Storage SOP Class

**Table 92: IOD of Created Secondary Capture Image Storage SOP Class Instances**

| Information Entity | Module | Presence Of Module |
|---|---|---|
| Patient | Patient Module | ALWAYS |
| Study | General Study Module | ALWAYS |
| Study | Patient Study Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Series | General Series Module | ALWAYS |
| Equipment | General Equipment Module | ALWAYS |
| Equipment | SC Equipment Module | ALWAYS |
| Image | General Image Module | ALWAYS |
| Image | Image Pixel Module | ALWAYS |
| Image | SC Image Module | ALWAYS |
| Image | VOI LUT Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Image | SOP Common Module | ALWAYS |
| | Extended Dicom and Private attributes | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |

**Table 93: Patient Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Patient's Name | 0010,0010 | PN | | VNAP | COPY | - |
| Patient ID | 0010,0020 | LO | | VNAP | COPY | - |
| Patient's Birth Date | 0010,0030 | DA | | VNAP | COPY | - |
| Patient's Birth Time | 0010,0032 | TM | | ANAP | COPY | - |
| Patient's Sex | 0010,0040 | CS | | VNAP | COPY | - |
| Other Patient Ids | 0010,1000 | LO | | ANAP | COPY | - |
| Ethnic Group | 0010,2160 | SH | | ANAP | COPY | - |
| Patient Comments | 0010,4000 | LT | | ANAP | COPY | - |

**Table 94: General Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Study Instance UID | 0020,000D | UI | | ALWAYS | COPY | - |
| Study Date | 0008,0020 | DA | | ALWAYS | COPY | - |
| Study Time | 0008,0030 | TM | | ALWAYS | COPY | - |
| Referring Physician's Name | 0008,0090 | PN | | VNAP | COPY | - |
| Study ID | 0020,0010 | SH | | VNAP | COPY | - |
| Accession Number | 0008,0050 | SH | | VNAP | COPY | - |
| Study Description | 0008,1030 | LO | | ANAP | COPY | - |
| Name of Physician(s) Reading Study | 0008,1060 | PN | | ANAP | COPY | - |
| Referenced Study Sequence | 0008,1110 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | COPY | - |
| Procedure Code Sequence | 0008,1032 | SQ | | ANAP | COPY | - |
| >Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| >Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |
| >Code Meaning | 0008,0104 | LO | | ALWAYS | COPY | - |

**Table 95: Patient Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Patient's Size | 0010,1020 | DS | | ANAP | COPY | - |
| Patient's Weight | 0010,1030 | DS | | ANAP | COPY | - |

**Table 96: General Series Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Modality | 0008,0060 | CS | | ALWAYS | COPY | - |
| Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO | - |
| Series Number | 0020,0011 | IS | | VNAP | AUTO | - |
| Series Date | 0008,0021 | DA | | ALWAYS | AUTO | - |
| Series Time | 0008,0031 | TM | | ALWAYS | AUTO | - |
| Series Description | 0008,103E | LO | | ANAP | USER | - |
| Referenced Performed Procedure Step Sequence | 0008,1111 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ANAP | FIXED | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ANAP | COPY | - |
| Patient Position | 0018,5100 | CS | | ANAP | COPY | - |
| Request Attributes Sequence | 0040,0275 | SQ | | ALWAYS | COPY | - |
| >Requested Procedure ID | 0040,1001 | SH | | ANAP | COPY | - |
| >Scheduled Procedure Step ID | 0040,0009 | SH | | ANAP | COPY | - |
| >Scheduled Procedure Step Description | 0040,0007 | LO | | ANAP | COPY | - |
| >Scheduled Protocol Code Sequence | 0040,0008 | SQ | | ANAP | COPY | - |
| >>Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |
| >>Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |
| >>Code Meaning | 0008,0104 | LO | | ALWAYS | COPY | - |
| Performed Procedure Step ID | 0040,0253 | SH | | ANAP | COPY | - |
| Performed Procedure Step Start Date | 0040,0244 | DA | | ANAP | COPY | - |
| Performed Procedure Step Start Time | 0040,0245 | TM | | ANAP | COPY | - |
| Performed Procedure Step Description | 0040,0254 | LO | | ANAP | COPY | - |
| Performed Protocol Code Sequence | 0040,0260 | SQ | | ANAP | COPY | - |
| >Code Value | 0008,0100 | SH | | ALWAYS | COPY | - |
| >Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | COPY | - |
| >Code Meaning | 0008,0104 | LO | | ALWAYS | COPY | - |

**Table 97: General Equipment Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Manufacturer | 0008,0070 | LO | Philips, Syntermed, Inc. | VNAP | FIXED | “Syntermed, Inc.” for “Neuro Q” Application. Else Philips. |
| Institution Name | 0008,0080 | LO | | VNAP | COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Institution Address | 0008,0081 | ST | | VNAP | COPY | - |
| Station Name | 0008,1010 | SH | | ANAP | COPY | - |
| Institutional Department Name | 0008,1040 | LO | | ANAP | COPY | - |
| Manufacturer's Model Name | 0008,1090 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal |
| Device Serial Number | 0018,1000 | LO | | ANAP | COPY | - |
| Software Version(s) | 0018,1020 | LO | 11.x/ AIM_DICOM_210 | ANAP | FIXED | "AIM_DICOM_210" for "Auto Quant" Application. Else "11.x" |

**Table 98: SC Equipment Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Conversion Type | 0008,0064 | CS | WSD | ALWAYS | FIXED | - |
| Secondary Capture Device ID | 0018,1010 | LO | | ANAP | AUTO | - |
| Secondary Capture Device Manufacturer | 0018,1016 | LO | Philips Medical Systems | ALWAYS | FIXED | - |
| Secondary Capture Device Manufacturer's Model name | 0018,1018 | LO | IntelliSpace Portal | ANAP | FIXED | - |
| Secondary Capture Device Software Version(s) | 0018,1019 | LO | 11.x | ANAP | FIXED | - |

**Table 99: General Image Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Instance Number | 0020,0013 | IS | | VNAP | AUTO | - |
| Image Type | 0008,0008 | CS | DERIVED SECONDARY/ DERIVED SECONDARY PHILIPS_BOOKMARK | ALWAYS | FIXED | - |
| Content Date | 0008,0023 | DA | | ANAP | COPY | - |
| Content Time | 0008,0033 | TM | | ANAP | COPY | - |
| Patient Orientation | 0020,0020 | CS | | EMPTY | FIXED | - |
| Image comments | 0020,4000 | LT | | VNAP | USER | - |
| Burned In Annotation | 0028,0301 | CS | | ANAP | COPY | - |
| Lossy Image Compression | 0028,2110 | CS | | ANAP | COPY | - |
| Presentation LUT shape | 2050,0020 | CS | IDENTITY | ANAP | FIXED | Present only for MONOCHROME 2 Images |

**Table 100: Image Pixel Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Samples per Pixel | 0028,0002 | US | 1/3 | ALWAYS | FIXED | "1" for MONOCHROME 2 images and value = "3" for RGB images. |
| Photometric Interpretation | 0028,0004 | CS | MONOCHROME 2/ RGB | ALWAYS | USER | - |
| Rows | 0028,0010 | US | | ALWAYS | USER | - |
| Columns | 0028,0011 | US | | ALWAYS | USER | - |
| Bits Allocated | 0028,0100 | US | 8 | ALWAYS | FIXED | - |
| Bits Stored | 0028,0101 | US | 8 | ALWAYS | FIXED | - |
| High Bit | 0028,0102 | US | 7 | ALWAYS | FIXED | - |
| Pixel Representation | 0028,0103 | US | 0 | ALWAYS | FIXED | - |
| Pixel Data | 7FE0,0010 | OW | | ALWAYS | AUTO | - |
| Planar Configuration | 0028,0006 | US | 0 | ANAP | FIXED | Only for RGB images. |
| Pixel Aspect Ratio | 0028,0034 | IS | | ALWAYS | AUTO | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Smallest Image Pixel Value | 0028,0106 | US | | ALWAYS | AUTO | - |
| Largest Image Pixel Value | 0028,0107 | US | | ALWAYS | AUTO | - |

**Table 101: SC Image Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Date of Secondary Capture | 0018,1012 | DA | | ALWAYS | AUTO | - |
| Time of Secondary Capture | 0018,1014 | TM | | ALWAYS | AUTO | - |

**Table 102: VOI LUT Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Window Center | 0028,1050 | DS | | ANAP | AUTO | Only for MONOCHORME 2 images |
| Window Width | 0028,1051 | DS | | ANAP | AUTO | Only for MONOCHROME 2 images |

**Table 103: SOP Common Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| SOP Class UID | 0008,0016 | UI | 1.2.840.10008.5.1.4.1.1.7 | ALWAYS | FIXED | - |
| SOP Instance UID | 0008,0018 | UI | | ALWAYS | AUTO | - |
| Specific Character Set | 0008,0005 | CS | ISO_IR 100 | ALWAYS | FIXED | - |
| Instance Creation Date | 0008,0012 | DA | | ALWAYS | AUTO | - |
| Instance Creation Time | 0008,0013 | TM | | ALWAYS | AUTO | - |

**Table 104: Extended DICOM and private attributes for Secondary Capture Image Storage SOP Class Instances**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Medical Alerts | 0010,2000 | LO | | ANAP | COPY | - |
| Contrast Allergies | 0010,2110 | LO | | ANAP | COPY | - |
| Pregnancy Status | 0010,21C0 | US | | ANAP | COPY | - |
| Special Needs | 0038,0050 | LO | | ANAP | COPY | - |
| Patient State | 0038,0500 | LO | | ANAP | COPY | - |
| IMPLEMENTOR_ID | 0041,0010 | LO | | ANAP | COPY | - |
| REPORT_TYPE | 0041,1010 | CS | | ANAP | COPY | - |
| Unknown Private Creator | 00e1,0010 | LO | | ANAP | COPY | - |
| Unknown | 00e1,1080 | OB | | ANAP | COPY | - |
| Private Creator (ELSCINT1) | 00e1,0011 | LO | | ANAP | COPY | - |
| Unknown | 00e1,111D | IS | | ANAP | COPY | - |
| Unknown | 00e1,1140 | SH | | ANAP | COPY | - |
| Unknown | 00e1,110e | LT | | ANAP | COPY | - |
| Unknown | 00e1,110f | LO | | ANAP | COPY | - |
| Private Creator (ELSCINT1) | 07A1,0010 | LO | | ANAP | COPY | - |
| Unknown | 07A1,100A | OB | | ANAP | COPY | - |
| Unknown | 07A1,1010 | LO | | ANAP | COPY | - |
| Unknown | 07A1,1011 | LO | | ANAP | COPY | - |
| Private Creator | 2001,0010 | LO | Philips Imaging DD 001 | ANAP | COPY | - |
| Unknown (ELSEWHERE) | 2001, 1063 | CS | | ANAP | COPY | - |
| Private Creator | 7051,0010 | LO | PHILIPS NM-Private | ANAP | COPY | - |
| NM Bookmark version | 7051,1034 | LT | | ANAP | COPY | Version of the bookmark created |

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### 2.1.2.9. Multi-Frame Grayscale Byte Secondary Capture Image Storage SOP Class

**Table 105: IOD of Created Multi-Frame Grayscale Byte Secondary Capture Image Storage SOP Class Instances**

| Information Entity | Module | Presence Of Module |
|---|---|---|
| Patient | Patient Module | ALWAYS |
| Study | Patient Study Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Study | General Study Module | ALWAYS |
| Series | General Series Module | ALWAYS |
| Equipment | General Equipment Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Equipment | SC Equipment Module | ALWAYS |
| Image | General Image Module | ALWAYS |
| Image | SC Image Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Image | Multi-Frame Module | ALWAYS |
| Image | SC Multi-Frame Module | ALWAYS |
| Image | Cine Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Image | Image Pixel Module | ALWAYS |
| Image | SOP Common Module | ALWAYS |
| | Extended Dicom and Private attributes | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |

**Table 106: Patient Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Patient's Name | 0010,0010 | PN | | VNAP | COPY | - |
| Patient ID | 0010,0020 | LO | | VNAP | COPY | - |
| Patient's Birth Date | 0010,0030 | DA | | VNAP | COPY | - |
| Patient's Birth Time | 0010,0032 | TM | | VNAP | COPY | - |
| Patient's Sex | 0010,0040 | CS | | VNAP | COPY | - |
| Other Patient Ids | 0010,1000 | LO | | ANAP | COPY | - |
| Ethnic Group | 0010,2160 | SH | | ANAP | COPY | - |
| Patient Comments | 0010,4000 | LT | | ANAP | COPY | - |

**Table 107: Patient Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Patients Size | 0010,0020 | LO | | VNAP | COPY | - |
| Patients Weight | 0010,0030 | DA | | VNAP | COPY | - |

**Table 108: General Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Study Instance UID | 0020,000D | UI | | ALWAYS | COPY | - |
| Study Date | 0008,0020 | DA | | ALWAYS | COPY | - |
| Study Time | 0008,0030 | TM | | ALWAYS | COPY | - |
| Referring Physician's Name | 0008,0090 | PN | | VNAP | COPY | - |
| Study ID | 0020,0010 | SH | | VNAP | COPY | - |
| Accession Number | 0008,0050 | SH | | VNAP | COPY | - |
| Study Description | 0008,1030 | LO | | ANAP | COPY | - |
| Name of Physician(s) Reading Study | 0008,1060 | PN | | ANAP | COPY | - |
| Referenced Study Sequence | 0008,1110 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | COPY | - |
| Procedure Code Sequence | 0008,1032 | SQ | | ANAP | COPY | - |
| >Code Value | 0008,0100 | SH | | ANAP | COPY | - |
| >Coding Scheme Designator | 0008,0102 | SH | | ANAP | COPY | - |
| >Code Meaning | 0008,0104 | LO | | ANAP | COPY | - |

**Table 109: General Series Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Modality | 0008,0060 | CS | | ALWAYS | COPY | - |
| Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO | - |
| Series Number | 0020,0011 | IS | | VNAP | AUTO | - |
| Series Date | 0008,0021 | DA | | ALWAYS | AUTO | - |
| Series Time | 0008,0031 | TM | | ALWAYS | AUTO | - |
| Series Description | 0008,103E | LO | | ANAP | USER | - |
| Referenced Performed Procedure Step Sequence | 0008,1111 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | FIXED | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | COPY | - |
| Patient Position | 0018,5100 | CS | | ANAP | COPY | - |
| Request Attributes Sequence | 0040,0275 | SQ | | ALWAYS | COPY | - |
| >Requested Procedure ID | 0040,1001 | SH | | ANAP | COPY | - |
| >Scheduled Procedure Step ID | 0040,0009 | SH | | ANAP | COPY | - |
| >Scheduled Procedure Step Description | 0040,0007 | LO | | ANAP | COPY | - |
| >Scheduled Protocol Code Sequence | 0040,0008 | SQ | | ANAP | COPY | - |
| >>Code Value | 0008,0100 | SH | | ANAP | COPY | - |
| >>Coding Scheme Designator | 0008,0102 | SH | | ANAP | COPY | - |
| >>Code Meaning | 0008,0104 | LO | | ANAP | COPY | - |
| Performed Procedure Step ID | 0040,0253 | SH | | ANAP | COPY | - |
| Performed Procedure Step Start Date | 0040,0244 | DA | | ANAP | COPY | - |
| Performed Procedure Step Start Time | 0040,0245 | TM | | ANAP | COPY | - |
| Performed Procedure Step Description | 0040,0254 | LO | | ANAP | COPY | - |
| Performed Protocol Code Sequence | 0040,0260 | SQ | | ANAP | COPY | - |
| >Code Value | 0008,0100 | SH | | ANAP | COPY | - |
| >Coding Scheme Designator | 0008,0102 | SH | | ANAP | COPY | - |
| >Code Meaning | 0008,0104 | LO | | ANAP | COPY | - |

**Table 110: General Equipment Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Manufacturer | 0008,0070 | LO | Philips, Syntermed, Inc. | VNAP | FIXED | “Syntermed, Inc.” for “Neuro Q” Application. Else Philips. |
| Institution Name | 0008,0080 | LO | | ANAP | COPY | - |
| Institution Address | 0008,0081 | ST | | ANAP | COPY | - |
| Station Name | 0008,1010 | SH | | ANAP | COPY | - |
| Institutional Department Name | 0008,1040 | LO | | ANAP | COPY | - |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Manufacturer's Model Name | 0008,1090 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal |
| Device Serial Number | 0018,1000 | LO | | ANAP | COPY | - |
| Software Version(s) | 0018,1020 | LO | 11.x/ AIM_DICOM_210 | ANAP | FIXED | "AIM_DICOM_210" for "Auto Quant" Application. Else "11.x" |

**Table 111: SC Equipment Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Conversion Type | 0008,0064 | CS | WSD | ALWAYS | FIXED | - |
| Secondary Capture Device ID | 0018,1010 | LO | | ANAP | AUTO | - |
| Secondary Capture Device Manufacturer | 0018,1016 | LO | Philips Medical Systems | ALWAYS | FIXED | - |
| Secondary Capture Device Manufacturer's Model name | 0018,1018 | LO | Philips Portal | ANAP | FIXED | Philips Portal |
| Secondary Capture Device Software Version(s) | 0018,1019 | LO | 11.x | ANAP | FIXED | - |

**Table 112: General Image Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Instance Number | 0020,0013 | IS | | VNAP | AUTO | - |
| Image Type | 0008,0008 | CS | DERIVED\SECONDARY | ALWAYS | FIXED | - |
| Patient Orientation | 0020,0020 | | | EMPTY | FIXED | - |
| Image comments | 0020,4000 | | | ANAP | COPY | - |

**Table 113: SC Image Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Date of Secondary Capture | 0018,1012 | DA | | ANAP | AUTO | - |
| Time of Secondary Capture | 0018,0014 | TM | | ANAP | AUTO | - |

**Table 114: Multi-Frame Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Number of Frames | 0028,0008 | IS | | ALWAYS | IMPLICIT | - |
| Frame Increment Pointer | 0028,0009 | AT | | ALWAYS | AUTO | - |

**Table 115: SC Multi-Frame Image Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Burned In Annotation | 0028,0301 | CS | | ALWAYS | AUTO | - |
| Presentation LUT shape | 2050,0020 | CS | IDENTITY | ANAP | FIXED | Present only for MONOCHROME 2 Images |

**Table 116: Cine Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Preferred Playback Sequencing | 0018,1244 | US | 0 | ALWAYS | FIXED | - |
| Frame Time | 0018,1063 | DS | | ALWAYS | AUTO | - |
| Cine Rate | 0018,0040 | IS | | ALWAYS | AUTO | - |

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**Table 117: Image Pixel Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Samples per Pixel | 0028,0002 | US | 1 | ALWAYS | FIXED | - |
| Photometric Interpretation | 0028,0004 | CS | MONOCHROME 2 | ALWAYS | USER | - |
| Rows | 0028,0010 | US | | ALWAYS | USER | - |
| Columns | 0028,0011 | US | | ALWAYS | USER | - |
| Bits Allocated | 0028,0100 | US | 8 | ALWAYS | FIXED | - |
| Bits Stored | 0028,0101 | US | 8 | ALWAYS | FIXED | - |
| High Bit | 0028,0102 | US | 7 | ALWAYS | FIXED | - |
| Pixel Representation | 0028,0103 | US | 0 | ALWAYS | FIXED | - |
| Pixel Data | 7FE0,0010 | OW | | ALWAYS | AUTO | - |
| Pixel Aspect Ratio | 0028,0034 | IS | | ALWAYS | AUTO | - |
| Smallest Image Pixel Value | 0028,0106 | US | | ALWAYS | AUTO | - |
| Largest Image Pixel Value | 0028,0107 | US | | ALWAYS | AUTO | - |

**Table 118: SOP Common Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| SOP Class UID | 0008,0016 | UI | 1.2.840.10008.5.1.4.1.1.7.2 | ALWAYS | FIXED | 1.2.840.10008.5.1.4.1.1.7.2 |
| SOP Instance UID | 0008,0018 | UI | | ALWAYS | AUTO | - |
| Specific Character Set | 0008,0005 | CS | ISO_IR 100 | ALWAYS | FIXED | |
| Instance Creation Date | 0008,0012 | DA | | ANAP | AUTO | - |
| Instance Creation Time | 0008,0013 | TM | | ANAP | AUTO | - |

**Table 119: Extended DICOM and private attributes for Secondary Capture Image Storage SOP Class Instances**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Medical Alerts | 0010,2000 | LO | | ANAP | COPY | - |
| Contrast Allergies | 0010,2110 | LO | | ANAP | COPY | - |
| Pregnancy Status | 0010,21C0 | US | | ANAP | COPY | - |
| Special Needs | 0038,0050 | LO | | ANAP | COPY | - |
| Patient State | 0038,0500 | LO | | ANAP | COPY | - |
| Window Center | 0028,1050 | DS | | ANAP | AUTO | Only for MONOCHORME 2 images |
| Window Width | 0028,1051 | DS | | ANAP | AUTO | Only for MONOCHROME 2 images |
| Private Creator | 1001,0010 | LO | | ANAP | AUTO | - |
| Private Creator | 1001,0011 | LO | | ANAP | AUTO | - |
| Unknown Tag & Data | 1001,1018 | CS | | ANAP | AUTO | - |
| Unknown Tag & Data | 1001,1103 | LO | | ANAP | AUTO | - |
| Private Creator | 2001,0010 | LO | | ANAP | AUTO | - |
| Examination Source | 2001,1063 | CS | | ANAP | AUTO | - |
| Unknown Tag & Data | 2001,10F3 | CS | | ANAP | AUTO | - |
| Private Creator | 2005,0010 | LO | | ANAP | AUTO | - |
| Unknown Tag & Data | 2005,103A | LT | | ANAP | AUTO | - |

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### 2.1.2.10. Multi-Frame True Color Secondary Capture Image Storage SOP Class

**Table 120: IOD of Created Multi-Frame True Color Secondary Capture Image Storage SOP Class Instances**

| Information Entity | Module | Presence Of Module |
|---|---|---|
| Patient | Patient Module | ALWAYS |
| Study | General Study Module | ALWAYS |
| Series | General Series Module | ALWAYS |
| Equipment | General Equipment Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Equipment | SC Equipment Module | ALWAYS |
| Image | General Image Module | ALWAYS |
| Image | SC Multi-Frame Module | ALWAYS |
| Image | Cine Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Image | Multi-Frame Module | ALWAYS |
| Image | Image Pixel Module | ALWAYS |
| Image | SOP Common Module | ALWAYS |
| | Extended Dicom and Private attributes | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |

**Table 121: Patient Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Patient's Name | 0010,0010 | PN | | VNAP | COPY | - |
| Patient ID | 0010,0020 | LO | | VNAP | COPY | - |
| Patient's Birth Date | 0010,0030 | DA | | VNAP | COPY | - |
| Patient's Birth Time | 0010,0032 | TM | | ANAP | COPY | - |
| Patient's Sex | 0010,0040 | CS | | VNAP | COPY | - |
| Other Patient Ids | 0010,1000 | LO | | ANAP | COPY | - |
| Ethnic Group | 0010,2160 | SH | | ANAP | COPY | - |
| Patient Comments | 0010,4000 | LT | | ANAP | COPY | - |

**Table 122: General Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Study Instance UID | 0020,000D | UI | | ALWAYS | COPY | - |
| Study Date | 0008,0020 | DA | | ALWAYS | COPY | - |
| Study Time | 0008,0030 | TM | | ALWAYS | COPY | - |
| Referring Physician's Name | 0008,0090 | PN | | VNAP | COPY | - |
| Study ID | 0020,0010 | SH | | VNAP | COPY | - |
| Accession Number | 0008,0050 | SH | | VNAP | COPY | - |
| Study Description | 0008,1030 | LO | | ANAP | COPY | - |
| Name of Physician(s) Reading Study | 0008,1060 | PN | | ANAP | COPY | - |
| Referenced Study Sequence | 0008,1110 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ANAP | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ANAP | COPY | - |
| Procedure Code Sequence | 0008,1032 | SQ | | ANAP | COPY | - |
| >Code Value | 0008,0100 | SH | | ANAP | COPY | - |
| >Coding Scheme Designator | 0008,0102 | SH | | ANAP | COPY | - |
| >Code Meaning | 0008,0104 | LO | | ANAP | COPY | - |

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**Table 123: General Series Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Modality | 0008,0060 | CS | | ALWAYS | COPY | - |
| Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO | - |
| Series Number | 0020,0011 | IS | | VNAP | AUTO | - |
| Series Date | 0008,0021 | DA | | ALWAYS | AUTO | - |
| Series Time | 0008,0031 | TM | | ALWAYS | AUTO | - |
| Series Description | 0008,103E | LO | | ANAP | USER | - |
| Referenced Performed Procedure Step Sequence | 0008,1111 | SQ | | ANAP | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ANAP | FIXED | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ANAP | COPY | - |
| Patient Position | 0018,5100 | CS | | ANAP | COPY | - |
| Request Attributes Sequence | 0040,0275 | SQ | | ALWAYS | COPY | - |
| >Requested Procedure ID | 0040,1001 | SH | | ANAP | COPY | - |
| >Scheduled Procedure Step ID | 0040,0009 | SH | | ANAP | COPY | - |
| >Scheduled Procedure Step Description | 0040,0007 | LO | | ANAP | COPY | - |
| >Scheduled Protocol Code Sequence | 0040,0008 | SQ | | ANAP | COPY | - |
| >>Code Value | 0008,0100 | SH | | ANAP | COPY | - |
| >>Coding Scheme Designator | 0008,0102 | SH | | ANAP | COPY | - |
| >>Code Meaning | 0008,0104 | LO | | ANAP | COPY | - |
| Performed Procedure Step ID | 0040,0253 | SH | | ANAP | COPY | - |
| Performed Procedure Step Start Date | 0040,0244 | DA | | ANAP | COPY | - |
| Performed Procedure Step Start Time | 0040,0245 | TM | | ANAP | COPY | - |
| Performed Procedure Step Description | 0040,0254 | LO | | ANAP | COPY | - |
| Performed Protocol Code Sequence | 0040,0260 | SQ | | ANAP | COPY | - |
| >Code Value | 0008,0100 | SH | | ANAP | COPY | - |
| >Coding Scheme Designator | 0008,0102 | SH | | ANAP | COPY | - |
| >Code Meaning | 0008,0104 | LO | | ANAP | COPY | - |

**Table 124: General Equipment Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Manufacturer | 0008,0070 | LO | Philips, Syntermed, Inc. | VNAP | FIXED | “Syntermed, Inc.” for “Neuro Q” Application. Else Philips. |
| Station Name | 0008,1010 | SH | | ANAP | COPY | - |
| Institutional Department Name | 0008,1040 | LO | | ANAP | COPY | - |
| Manufacturer’s Model Name | 0008,1090 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal |
| Device Serial Number | 0018,1000 | LO | | ANAP | COPY | - |
| Software Version(s) | 0018,1020 | LO | 11.x/ AIM_DICOM_210 | ANAP | FIXED | “AIM_DICOM_210” for “Auto Quant” Application. Else “11.x” |

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**Table 125: SC Equipment Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Modality | 0008,0060 | CS | | ANAP | AUTO | - |
| Conversion Type | 0008,0064 | CS | WSD | ALWAYS | FIXED | - |
| Secondary Capture Device ID | 0018,1010 | LO | | ANAP | AUTO | - |
| Secondary Capture Device Manufacturer | 0018,1016 | LO | Philips Medical Systems | ALWAYS | FIXED | - |
| Secondary Capture Device Manufacturer's Model name | 0018,1018 | LO | Philips Portal | ANAP | FIXED | Philips Portal |
| Secondary Capture Device Software Version(s) | 0018,1019 | LO | 11.x | ANAP | FIXED | - |

**Table 126: General Image Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Instance Number | 0020,0013 | IS | | VNAP | AUTO | - |
| Image Type | 0008,0008 | CS | DERIVED SECONDARY | ALWAYS | FIXED | - |
| Acquisition Date | 0008,0022 | DA | | ANAP | COPY | - |
| Content Date | 0008,0023 | DA | | ANAP | AUTO | - |
| Acquisition Time | 0008,0032 | TM | | ANAP | COPY | - |
| Content Time | 0008,0033 | TM | | ANAP | AUTO | - |
| Burned In Annotation | 0028,0301 | CS | | ANAP | AUTO, COPY | - |
| Lossy Image Compression | 0028,2110 | CS | | ANAP | COPY | Applied value: 00 |
| Patient Orientation | 0020,0020 | | | EMPTY | FIXED | - |
| Image comments | 0020,4000 | | | | | - |

**Table 127: SC Multi-Frame Image Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Burned In Annotation | 0028,0301 | CS | | ALWAYS | AUTO | - |
| Presentation LUT shape | 2050,0020 | CS | IDENTITY | ANAP | FIXED | Present only for MONOCHROME 2 Images |

**Table 128: Cine Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Preferred Playback Sequencing | 0018,1244 | US | 0 | ALWAYS | FIXED | - |
| Recommended Display Frame Rate | 0008,2144 | IS | | AVAPCV | COPY | - |
| Frame Delay | 0018,1066 | DS | | AVAPCV | COPY | - |
| Frame Time | 0018,1063 | DS | | ALWAYS | AUTO | - |
| Cine Rate | 0018,0040 | IS | | ALWAYS | AUTO | - |

**Table 129: Multi-Frame Image Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Number of Frames | 0028,0008 | IS | | ALWAYS | IMPLICIT | - |
| Content Date | 0008,0023 | DA | | VNAP | AUTO | - |
| Content Time | 0008,0033 | TM | | VNAP | AUTO | - |
| Instance Number | 0020,0013 | IS | | ALWAYS | AUTO | - |
| Frame Increment Pointer | 0028,0009 | AT | | ALWAYS | AUTO | - |

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**Table 130: Image Pixel Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Samples per Pixel | 0028,0002 | US | 3 | ALWAYS | FIXED | Only for RGB images |
| Photometric Interpretation | 0028,0004 | CS | RGB | ALWAYS | USER | - |
| Rows | 0028,0010 | US | | ALWAYS | USER | - |
| Columns | 0028,0011 | US | | ALWAYS | USER | - |
| Bits Allocated | 0028,0100 | US | 8 | ALWAYS | FIXED | - |
| Bits Stored | 0028,0101 | US | 8 | ALWAYS | FIXED | - |
| High Bit | 0028,0102 | US | 7 | ALWAYS | FIXED | - |
| Pixel Representation | 0028,0103 | US | 0 | ALWAYS | FIXED | - |
| Pixel Data | 7FE0,0010 | OW | | ALWAYS | AUTO | - |
| Planar Configuration | 0028,0006 | US | 0 | ANAP | FIXED | Only for RGB images |
| Pixel Aspect Ratio | 0028,0034 | IS | | ALWAYS | AUTO | - |
| Smallest Image Pixel Value | 0028,0106 | US | | ALWAYS | AUTO | - |
| Largest Image Pixel Value | 0028,0107 | US | | ALWAYS | AUTO | - |

**Table 131: SOP Common Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| SOP Class UID | 0008,0016 | UI | 1.2.840.10008.5.1.4.1.1.7.4 | ALWAYS | FIXED | |
| SOP Instance UID | 0008,0018 | UI | | ALWAYS | AUTO | |
| Specific Character Set | 0008,0005 | CS | ISO_IR 100 | ALWAYS | FIXED | |
| Instance Creation Date | 0008,0012 | DA | | ALWAYS | AUTO | |
| Instance Creation Time | 0008,0013 | TM | | ALWAYS | AUTO | |

**Table 132: Extended DICOM and private attributes for Secondary Capture Image Storage SOP Class Instances**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Medical Alerts | 0010,2000 | LO | | ANAP | COPY | - |
| Contrast Allergies | 0010,2110 | LO | | ANAP | COPY | - |
| Pregnancy Status | 0010,21C0 | US | | ANAP | COPY | - |
| Special Needs | 0038,0050 | LO | | ANAP | COPY | - |
| Patient State | 0038,0500 | LO | | ANAP | COPY | - |
| Window Center | 0028,1050 | DS | | ANAP | AUTO | Only for MONOCHORME 2 images |
| Window Width | 0028,1051 | DS | | ANAP | AUTO | Only for MONOCHROME 2 images |

### 2.1.2.11. Key Object Selection Document Storage SOP Class

**Table 133: IOD of Created Key Object Selection Document Storage SOP Class Instances**

| Information Entity | Module | Presence Of Module |
|---|---|---|
| Patient | Patient Module | ALWAYS |
| Study | General Study Module | ALWAYS |
| Study | Patient Study Module | CONDITIONAL – IF PRESENT IN THE SOURCE DATA |
| Series | Key Object Document Series Module | ALWAYS |
| Equipment | General Equipment Module | ALWAYS |
| Document | Key Object Document Module | ALWAYS |
| | SR Document Content Module | ALWAYS |

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| | | |
|---|---|---|
| Document | SOP Common Module | ALWAYS |

**Table 134: Patient Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Patient's Name | 0010,0010 | PN | | VNAP | COPY | - |
| Patient ID | 0010,0020 | LO | | VNAP | COPY | - |
| Patient's Birth Date | 0010,0030 | DA | | VNAP | COPY | - |
| Patient's Sex | 0010,0040 | CS | | VNAP | COPY | - |

**Table 135: General Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Study Date | 0008,0020 | DA | | VNAP | COPY | - |
| Study Time | 0008,0030 | TM | | VNAP | COPY | - |
| Accession Number | 0008,0050 | SH | | VNAP | COPY | - |
| Referring Physician's Name | 0008,0090 | PN | | VNAP | COPY | - |
| Study Instance UID | 0020,000D | UI | | ALWAYS | COPY | |
| Study ID | 0020,0010 | SH | | VNAP | COPY | |
| Study Description | 0008,1030 | LO | | ANAP | COPY | |

**Table 136: Patient Study Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Patient’s Age | 0010,1010 | AS | | ANAP | COPY | - |

**Table 137: Key Object Document Series Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO | - |
| Modality | 0008,0060 | CS | | ALWAYS | COPY | - |
| Series Number | 0020,0011 | IS | | VNAP | AUTO | - |
| Referenced Performed Procedure Step Sequence | 0008,1111 | SQ | | ANAP | COPY | - |

**Table 138: General Equipment Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Manufacturer | 0008,0070 | LO | Philips, Syntermed, Inc. | VNAP | FIXED | “Syntermed, Inc.” for “Neuro Q” Application. Else Philips. |
| Institution Address | 0008,0081 | ST | | ANAP | COPY | - |
| Station Name | 0008,1010 | SH | | ANAP | COPY | - |
| Software Version(s) | 0018,1020 | LO | 11.x/ AIM_DICOM_210 | ANAP | FIXED | “AIM_DICOM_210” for “Auto Quant” Application. Else “11.x” |
| Institution Name | 0008,0080 | LO | | ANAP | COPY | - |
| Manufacturer's Model Name | 0008,1090 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal |

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### Table 139: Key Object Document Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Content Time | 0008,0033 | TM | | ANAP | COPY | - |
| Content Date | 0008,0023 | DA | | ANAP | COPY | - |
| Current Requested Procedure Evidence Sequence | 0040,A375 | SQ | | ALWAYS | AUTO, COPY | - |
| >Study Instance UID | 0020,000D | UI | | ALWAYS | AUTO, COPY | - |
| >Referenced Series Sequence | 0008,1115 | SQ | | ALWAYS | AUTO, COPY | - |
| >>Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO, COPY | - |
| >>Referenced SOP Sequence | 0008,1199 | SQ | | ALWAYS | AUTO, COPY | - |
| >>>Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | AUTO, COPY | - |
| >>>Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | AUTO, COPY | - |

### Table 140: SR Document Content Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| Value Type | 0040,A040 | CS | | ALWAYS | AUTO, COPY | - |
| Concept Name Code Sequence | 0040,A043 | SQ | | ANAP | AUTO, COPY | - |
| >Code Value | 0008,0100 | SH | | ALWAYS | AUTO, COPY | - |
| >Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | AUTO, COPY | - |
| >Code Meaning | 0008,0104 | LO | | ALWAYS | AUTO, COPY | - |
| Observation Date Time | 0040,A032 | DT | | ANAP | AUTO, COPY | - |
| Content Sequence | 0040,A730 | SQ | | ANAP | AUTO, COPY | - |
| >Relationship Type | 0040,A010 | CS | | ALWAYS | AUTO, COPY | - |
| >Referenced SOP Sequence | 0008,1199 | SQ | | ALWAYs | AUTO, COPY | - |
| >>Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | AUTO, COPY | - |
| >>Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | AUTO, COPY | - |
| >Value Type | 0040,A040 | CS | | ALWAYS | AUTO, COPY | - |
| >Text Value | 0040,A160 | UT | | ANAP | AUTO, COPY | - |
| >Concept Name Code Sequence | 0040,A043 | SQ | | ANAP | AUTO, COPY | - |
| >>Code Value | 0008,0100 | SH | | ALWAYS | AUTO, COPY | - |
| >>Coding Scheme Designator | 0008,0102 | SH | | ALWAYS | AUTO, COPY | - |
| >>Code Meaning | 0008,0104 | LO | | ALWAYS | AUTO, COPY | - |
| >Referenced SOP Sequence | 0008,1199 | SQ | | ANAP | AUTO, COPY | - |
| >Continuity Of Content | 0040,A050 | CS | | ALWAYS | AUTO, COPY | - |
| >Content Template Sequence | 0040,A504 | SQ | | ANAP | AUTO, COPY | - |
| >>Mapping Resource | 0008,0105 | CS | | ALWAYS | AUTO, COPY | - |
| >>Template Identifier | 0040,DB00 | CS | | ALWAYS | AUTO, COPY | - |

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**Table 141: SOP Common Module**

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|---|---|---|---|---|---|
| SOP Instance UID | 0008,0018 | UI | | ALWAYS | | |
| Instance Number | 0020,0013 | IS | | ANAP | | |
| Specific Character Set | 0008,0005 | CS | | ANAP | AUTO | |
| SOP Class UID | 0008,0016 | UI | 1.2.840.10008.5.1.4.1.1.88.59 | ALWAYS | | 1.2.840.10008.5.1.4.1.1.88.59 |

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